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THE RELATIONSHIP OF NEUROLOGY TO PREVENTIVE MEDICINE*

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The neurologist is concerned with a branch of internal medicine which at first sight does not appear to have much relationship to public health, but, in reality, not only does such relationship exist, but it is a very intimate one. Though public health seems to concern itself with sanitation and pure food, epidemics and health-menacing noises, public hygiene is, in reality, public education. Its aim should be to teach people, not only how to live long, but how to live happily, and my first contention is that, until the present time, preventive medicine has concerned itself exclusively with the former, whereas, if the object and aim of life is the pursuit of happiness, personal and general, preventive medicine is but half accomplishing its purpose. Following its principles, we direct our efforts to stamping out diseases which kill, leaving unnoticed and unattacked those which maim and incapacitate. The victims of these often find life insupportable, and they not only menace the happiness of their families, but stain the escutcheon by the crime of self-destruction.

I shall attempt a discussion of the relationship of neurology to public health under two captions: first, our obvious duty in dealing with certain infectious diseases of the nervous system, and second, our privilege in attempting to overcome certain incapacitating mental states.

OUR DUTY

Certain infectious diseases of the nervous system, especially poliomyelitis and epidemic cerebrospinal meningitis should be considered reportable, quarantinable diseases. The former is not yet so considered by many health boards; the latter, fortunately, is. The epidemic prevalence of poliomyelitis has been recognized for nearly twenty-five years, the first epidemic having been studied in Norway in 1887, and the second in Vermont in 1894.[1] Since that time, more than fifty epidemics have been carefully described. As the result of the investigation of these epidemics, and particularly of the epidemic that occurred in southern Norway in 1905, the epidemic in New York in 1907, and the epidemic in York County, Nebraska in 1909, we are now in a position to state that the disease is communicable; that contact with a person sick of the disease is not necessary that another person may contract it; that the period of incubation is from four to ten days; that the contagiousness of the disease varies with the epidemic, and that the mortality rate is liable to great variation, in some instances being as low as 5 per cent., in others as high as 46 per cent. In addition, we know that the seasonal occurrence is very extraordinary; that it occurs practically only in the warm weather; and that unhygienic surroundings, density of population and conditions of health have little or no bearing on the occurrence of the disease.

The experience of Dr. G. P. Shidler[2] of York, Neb., shows that the disease can be readily controlled by quarantine, and boards of health should be urged to place poliomyelitis on the list of reportable diseases and to formulate measures which may be quickly enforced to constitute the strictest quarantine.

We must bear in mind that it is an acute and infectious disease of the cerebrospinal axis and its covering, the pia, with a pronounced and inexplicable predilection for the gray matter of the anterior portion of the spinal cord, which it nearly always succeeds in affecting before its pathogenic impetus is satisfied. It affects the gray matter in one case profoundly, in another triflingly, and the symptoms that result in any case must, of necessity, vary with the intensity of the infection and with the portion of the cerebrospinal axis that bears the brunt of the lesion. The most important factor in stamping out the disease is that we learn to recognize it early and that we interpret correctly the so-called atypical cases. In many of the epidemics the experience has been that milder cases and cases in which the paralysis was neither profound nor lasting were looked on as cases of grip or rheumatism. I need not say that these mild and difficult cases are as potent to disseminate the disease as are the severer cases.

The necessity for quarantining epidemic cerebrospinal meningitis is generally conceded. Here we are dealing with a disease that fights in the open, as it were. We know the natural history of the *Diplococcus intracellularis*, we know its mode of entrance into the system; and fortunately, thanks to the brilliant investigations of Flexner, we are in possession of a serum which, given early and properly, is adequate to control the disease, and, in any case, to rob it of its terrors. More than this, epidemic cerebrospinal meningitis is a disease that either kills its victim or allows him to recover, while poliomyelitis nearly always maims, and pitiably so, those that it does not kill.

Other varieties of infectious nervous diseases that come within the scope of the neurologist are epidemic polyneuritis and pellagra. The former is of such rare occurrence in this country, save in our tropical possessions, and the latter is now having its natural history

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Collins, Joseph: The Epidemiology of Poliomyelitis, THE JOURNAL A. M. A., June 11, 1910, p. 1925.

2. Shidler, G. P.: The Epidemic of Spinal Disease in Nebraska, THE JOURNAL A. M. A., Jan. 22, 1910, p. 277.

and pathology so carefully studied by those to whom the opportunity is given, that I shall make only this cursory reference to them here.

Preventive medicine has not given the attention that it should to certain diseases of the nervous system that flow out of occupation and especially of occupation in foundries, blast furnaces and rolling mills. There is a widespread or generalized intoxication of the nervous system that occurs in bronze workers. It is not possible in every instance to say whether the disease is a neuritis, a myelitis, or an encephalitis. A patient that I have had recently in the Neurological Institute will best illustrate this point and will, likewise, indicate how necessary it is to apprise workers in such foundries of the dangers to which they are exposed.

A man, 47 years old, who had lived a continent, healthy life, and who was by occupation a foreman in a bronze factory, was sent to me from Bellows Falls with the diagnosis of pernicious anemia. His story was that in the winter of 1909 he had had two or three attacks of dysentery without attributable cause. Careful inquiry revealed that during the previous summer he had an attack of salivation, that his mouth had been sore, that his breath was extremely offensive, smelling of garlic, and that he had a craving for raw onions, an article of food which he had not been accustomed to eat. In July 1909, and some time after the third attack of dysentery, he noticed that he would often be stricken with uncontrollable drowsiness, while talking to his men in the shop, while sitting at table, while in church, etc. In addition to this, he became forgetful and stupid. About two months later, he first noticed a sensation of numbness and weakness in the extremities, phenomena that increased until he was wholly paralyzed. It was also noted that his speech became somewhat indistinct, and on two occasions he was incontinent of urine. After three months this paralysis began to disappear gradually, and when I saw the patient in March, 1910, he was able to walk with the aid of a cane and supported by another person. The examination showed that there was no marked muscular atrophy. The station and gait and the purposeful movements of the hands were all ataxic. The knee-jerks, the ankle-jerks and the elbow-jerks were lively and the patient had the Babinski phenomenon (extension of the big toes on irritation of the soles) on both sides. There was no detectable disturbance of the various forms of sensibility nor were the special senses disordered. The pupils responded readily to light. Examination of the urine failed to reveal either arsenic or lead.

I interpret this case as an example of intoxication of the nervous system, the peripheral as well as the central, probably by arsenic, although it is quite possible that it was the result of more than one metallic poison. The odor of garlic that was attached to the breath, the ptyalism, and the attacks of dysentery, might all be accounted for by arsenic, but arsenical poisoning has rarely been followed by symptoms indicative of implication of the spinal cord and brain such as existed in this case.

The point that I particularly wish to make, however, is that workers in factories such as this should have their health safeguarded.

There is a form of neuromuscular affection which occurs in workers exposed to high degrees of dry heat, such as stokers, puddlers, etc. Its most conspicuous system is what we neurologists call myokymia associated with generalized weakness. This condition has been studied by Edsall of Philadelphia, and I myself have encountered several instances of it. What its pathogenesis is, whether an intoxication by products developed within the system as the result of application of intense heat, or whether it is due directly to the heat, cannot as yet be said.

I purposely refrain from any discussion of the relationship of syphilis to diseases of the nervous system and to the bearing of this problem on preventive medicine. Everyone knows that there are certain organic diseases of the nervous system that flow out of syphilis, and that, if syphilis were conquered, tabes and its twin, general paresis, syphilitic spinal paralysis, and syphilitic endarteritis and meningitis would cease to exist. Syphilis is a social evil which must be dealt with in some other way than by science. The dominant instinct of man will be appeased illicitly, so long as the race exists and so long as alcohol is used. Education will do something toward diminishing its frequency, but a small amount of alcohol, taken at one time, quickly inhibits the effect of education. My personal belief is that we must check the ravages of syphilis by an adequate cure properly administered.

OUR PRIVILEGE

An incalculable part of all the misery, suffering and incapacity in the world is contributed by those functional nervous diseases that are now commonly called the psychoneuroses. They are the diseases that furnish the pabulum on which the rank growth of supernaturalism in therapy, in the shape of Eddyism and Emmanuelism in this country, has occurred. They are the diseases on which the quack fattens; they are the diseases whose existence is a constant reminder of our inadequacy to give proof of the reason for our existence, namely to heal the sick.

We do not successfully combat psychoneuroses, hysteria, psychasthenia, obsessive and anxiety states, because we do not prevent them. We do not prevent them because we do not know their cause. We know that they occur in individuals of neuropathic and psychopathic heritage, that is, in those whose ancestral endowment to resist strain and stress is below the normal, and we know that they are immediately conditioned, in persons thus predisposed, by normal and physical trauma.

During the past few years, a theory or hypothesis of the causation of the psychoneuroses has been evolved and put forth by Freud of Vienna, which is deserving of the most careful investigation and consideration. Although it does not, at first sight, seem to concern the physician who devotes himself to preventive medicine, in reality it does, for on him will devolve the devising of ways and means to prevent them.

The enormous importance of sexual factors in pathologic states as well as in normal conditions, has always been conceded, at least tacitly. It is Freud's merit to have opened up a wider vista into the delicate and hidden connections between the erotic element and nervous disease. His explanation of functional neuroses as the result of a mass of suppressed sexual desires has fallen like a bombshell into this era of sexual hypocrisy; and his ruthless application of the so-called sexual symbolism in all cases has naturally led to a strong, though by no means universal, reaction against the proposed remedy, psycho-analysis.

The question has been raised: Why should the sexual emotions alone, among the manifold equipment of the psyche, give rise to disturbances? In other words, why

regard the sexual emotion as the root of all other emotions? In answer it may be urged that there is only one thing in life which is desirable and pleasing enough in itself to induce human beings to sacrifice all else for it, and for which such sacrifices are constantly being made, namely, love, and its sexual gratification. The suppression of sexual life by sexual ethics is a deplorable concomitant of culture. In the interest of the public the individual is forced to immolate a part of his personality, especially his sexual instincts, and, among these, more particularly the heterosexual desire.

Under favorable circumstances, which include elements ranging from a trained will-power to sedative surroundings, the sexual instinct may be sublimed, that is, directed towards a spiritual instead of a carnal goal. It is then devoted to the amelioration, rather than the propagation of the species. Sublimation processes are the basis of artistic and scientific activities, and in more than a few cases, an unflagging diligence along a chosen line of work is the result of a transformed unsatisfied sexual desire. The sublimated sexuality finds its highest expression in adaption to circumstances, the harnessing of the plunging horses of instinct to the chariot of reason. But it is only the direction of the desires that is changed, not their strength; and unless a certain measure of direct sexual activation be left, the sublimation will lead to disease.

Psychoneuroses are the price of sublimation, the negative of the perversions, according to the teachings of Freud. The self-indulgent, who compromise between desires and gratification, are often blessed with iron "nerves," whereas the would-be ethereal and sexless are proverbially high-strung and nervous. The hysteric, beyond the boundary line of psychic equilibrium, cling so tenaciously to the desire as to renounce peace and happiness, preferring silence to confession. They exhibit an exaggerated tendency to sublimation, but their symptoms are abnormal sex manifestations.

Other psychoneurotic states, which, in the opinion of Freud, are mainly due to sexual abstinence, or rather, suppression, with or without masturbation, are the phobias and obsessions. The pathologic condition is, again, the outcome of the disproportion between the sexual demands and the sexual suppression.

A sexual etiology is common to all neuroses, and, in the psychoneuroses proper, dates back to childhood (Freud's infantile sexual traumatism). Such psychoneurotic states, on the basis of psychic traumatism, besides the phobias and obsessions, include neurasthenic fears with their sequelæ, disturbances of sleep, such as nightmare, and of speech such as stammering; nervous affections of the heart, the sexual heart, phrenocardia; hypochondriacal conditions; a number of sexual perversions, fetichism, sadism, masochism, psychic impotence, homosexualism and vaginismus. In his modified views, Freud holds that the factors of constitution and heredity regain their supremacy in proportion as the accidental experiences of sexual adventure recede into the background. Nevertheless, the customary term "neuropathic disposition," according to him, really means "sexual constitution" of the individual. The undeniable fact that sexual traumatism also plays a part in the life history of individuals who are apparently free from neurotic taint is ingeniously explained as the correct balance of the sexual equation.

In his later teachings Freud admits that the accidental effect of a psycho-traumatic experience on the infantile sexuality is not so far-reaching or relevant in its bearing on the origin of a psychoneurosis as is the individual reaction of the sexual constitution. His original view that a morbid fear is a sexual desire diverted from its natural course has been extended by the acceptance of other possible causative factors, namely a congenital diathesis expressed by psychic inadequacy for the control of the somatic sexual tension. The onset of a neurosis is governed by the original resistance of the nervous system, and facilitated by the ordinary emotional shocks of the individual's life, such as fright, grief, psychic fatigue; but the specific cause, the factor which determines the form of the neurosis, is sexual in character.

Hysteria, according to Freud's interpretation, is the result of the conflict between the sexual desire and the sexual suppression. The hysterical symptoms have the value of compromises between these two psychic currents. The sexual desire is confronted with internal resistance, notably modesty and physical aversion. Sexual abstainers (teetotalers in the *ars amandi*) accumulate a mass of unassimilated memories, suppressed reminiscenses and converted emotions. In the course of time, the original feelings are blurred, and finally vanish from the realm of consciousness, to become replaced by the familiar hysterical symptoms of globus, palsies, fits, etc. Provided the source of the disturbance can be reached, the suppressed emotion will find its natural solution, and the symptoms will disappear. Having a sexual etiology, hysteria is never associated with so-called innocence of thought, and hence the danger of corruption does not exist. Being of psychogenic origin, the disease requires fundamentally psychic measures for its control. The symptoms must be literally reasoned away.

I trust that I have said enough to convince everyone that the relationship between neurology and preventive medicine is a close one, and that the neurologist of the future must be one who works diligently in the field of prevehtive medicine. I venture to express the opinion that the expert in preventive medicine would profit from some training in neurology.

But the subject that I venture to bring to attention in the second part of my address, namely that of the psychoneuroses, is one that must be dealt with entirely from the pedagogic standpoint. We, as physicians, however, must devise ways and means for giving such instruction. It certainly cannot be given, and should not be given by the teachers in our schools. I regret to say that the vast majority of them that I have encountered have an ignorance of the principles of sex knowledge and sex hygiene that is almost abysmal. In fact, I am not at all sure that we physicians, as a class, take the trouble to acquaint ourselves as intimately with the principles of sex physiology as we should, and, of course, we cannot expect to teach that which we do not know, and we should not permit ourselves to get a knowledge of it while teaching, because the experiment is too dangerous to those with whom we are dealing. It seems to me that plain wholesome lectures on sex physiology given to small classes and in many instances individually, should be a part of the curriculum of every public and private school, and that these lectures should be given by physicians, men and women, whose sanity, honesty, earnestness, and ability have been testified to or vouched for by their appointments from the executive medical officer of boards of health.

37 West Fifty-fourth Street.

PAPILLARY CYSTADENOMA OF THE KIDNEY, ASSOCIATED WITH MYOMA OF THE UTERUS AND SPINAL CARIES *

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Summary.—The patient presented an unusual series of lesions, namely, uterine myoma with hemorrhage, spinal caries and kyphosis, together with a large bleeding tumor of the kidney. Hysterectomy was first done for the myoma. The kidney hemorrhage filled the bladder with firm clots which decomposed; a vesicovaginal incision gave exit to the offensive clots and averted infection of the kidney growth. The latter was removed by nephrectomy and later under local anesthesia the vesicovaginal fistula was closed. The patient recovered.

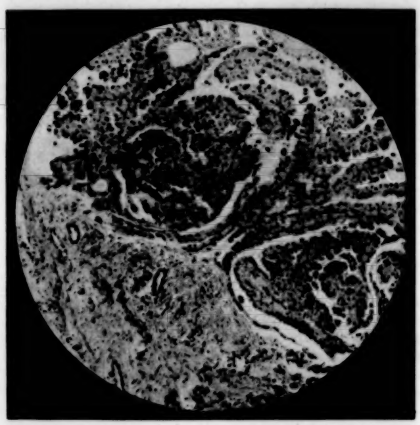

Fig. 1.—A papillomatous pedicle springing from modified kidney structure (× 100).

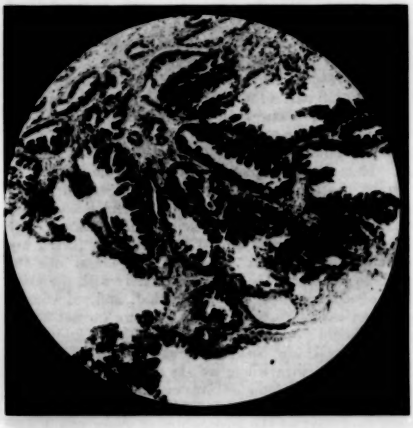

Fig. 2.—A loosely spread portion of a papillary growth (× 100).

History.—M. J., aged 27, married, sterile, was an overtall thin mulatto woman. On admission to the Presbyterian Hospital she was able to give little history except that of irregular hemorrhage from the vagina for a year, at times severe. The day before admission the urine was bloody also, but she had not clearly distinguished the uterine from the urinary bleeding in the past. For two months she had noticed a tumor in the left upper abdomen. There had been a little pain for a month in the left lumbar region, over the left iliac crest and in the left thigh and the legs. There were well-marked syphilitic scars about the anus and legs. The urine was negative except for abundant blood. As the hemoglobin was 28 per cent. and she was losing blood freely from the uterine tumor, abdominal hysterectomy was done as a first step. An interstitial uterine growth reached nearly to the navel, which the pathologic laboratory reported as a myoma of the uterus with no unusual features.

Recovery from the hysterectomy was aseptic, but about two weeks afterward the hemorrhage from the tumor of the left kidney, which had been absent since admission, began again and soon became serious. The bladder filled with firm clots, which became infected and highly offensive. The cystoscope showed blood coming from the left ureter, and, while it might have been possible to break up and remove clots with an evacuator, the process was not without danger and would probably have to be repeated. With the large mass present involving the lumbar spine as well as apparently the left kidney, not the slightest chance of infection through the bladder could be taken. Therefore a large vesicovaginal opening was made, attaching together the mucous membrane of the bladder and vagina. Removal of the clots and irrigation through this fistula promptly cleared up the bladder infection and maintained a clean field while the kidney was attended to.

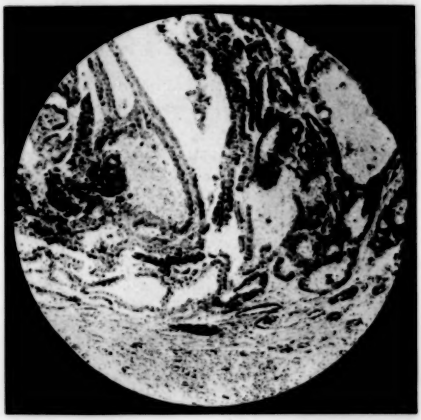

Fig. 3.—Shows cyst wall and areas of hemorrhage (× 100).

Examination of Tumor.—What appeared to be a kidney tumor reached 2 inches below the navel on the left side, filled the whole left upper quadrant and was lost under the ribs, which were forced outward and forward. The enlargement produced by the tumor continued around behind where it joined another swelling to the left of the three upper lumbar vertebræ. These projected backward out of line. The swelling immediately to the left of the diseased vertebræ was deep-seated between the ribs and the spine. There was tenderness, but no definite fluctuation and no redness of the skin. The

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

questions for decision were whether the abdominal tumor was directly continuous with the tumor of the spinal column; or whether the spinal disease was a caries and separate from the other tumor, while lying in contact with it; and, as the masses could not be separated by examination, whether an attempted nephrectomy would open up the spinal area or not. A well-marked bruit and thrill behind suggested an aneurism eroding the vertebræ, but it was found that these symptoms appeared only when the patient lay on the right side. Indeed, the kidney tumor proved to be suspended from its upper portion with some range of mobility below, so that with change of the patient's position it would swing against the aorta, giving rise to the bruit. The skin test of von Pirquet for tuberculosis was negative. The *x*-ray photograph showed necrosis and posterior displacement of the three upper lumbar vertebræ, apparently from intrinsic disease and not from erosion. Aspiration to a depth of 2 inches in the swelling to the left of the spine yielded dark, thin, bloody fluid. On this the report of the pathologic laboratory by Dr. Canby Robinson was sterile blood with excess of serum. Cultures and smears were negative for tubercle bacilli and other organisms. In the determination of the sufficiency of the other kidney, indigocarmin solution was injected into the buttock muscles by Dr. Laws. The cystoscope then showed active spouting of blued urine from the right ureter in eighteen minutes, while the blue stain appeared much more slowly on the diseased side, and the spurts were very feeble and infrequent. The blue stain was very faint on the left. This proved the relatively greater activity of excretion on the sound or right side, and as there were no casts, while the total twenty-four-hour quantity was good, nephrectomy appeared safe. Dr. Willard concurred in the opinion that the main mass was a renal tumor, probably separate from the tender swelling near the spine and that this was secondary to spinal caries. Operation proved the correctness of this view.

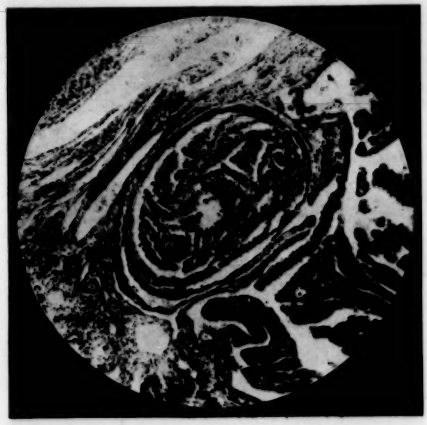

Fig. 4.—A small cyst and papillary growth inside (× 100).

Operation.—Through an incision 8 inches long forward over the tumor from the edge of the quadratus lumborum, the entire tumor was enucleated and proved to be a greatly enlarged left kidney. There was no evidence of infiltration of surrounding tissues. Owing to the inaccessibility of the stump, two curved hemostatic forceps were left attached to it, no ligatures being applied.

Postoperative History.—At the end of forty-eight hours these were unfastened, one being removed entirely on the third day and the other, which had appeared to be adherent, on the fourth day. There was no hemorrhage, and aseptic healing followed. Eighteen days after the nephrectomy, the vesicovaginal fistula was successfully closed with no pain under local anesthesia. Two per cent. eucain solution and 1 to 20,000 adrenalin solution were injected into the tissues of the vesicovaginal septum.

When studying the kidney functions prior to nephrectomy in this patient, the presence of the vesicovaginal fistula prevented the distention of the bladder with water or air to facilitate cystoscopy. As reported to the Philadelphia Academy of Surgery[1] I overcame the difficulty by introducing a finger-cot partly through the fistula and then distending the cot with water. This tightly closed the fistula for the time and made cystoscopy easy. Four weeks after the nephrectomy, when the patient, wearing a plaster jacket for the spinal caries, was nearly ready for discharge from the hospital she

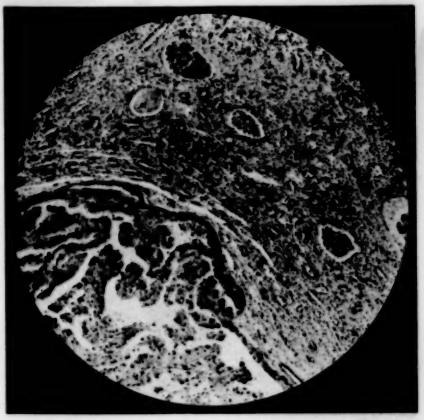

Fig. 5.—A portion of a cyst, and a portion of modified kidney cortex which contains Malpighian bodies and numerous tubules cut in various directions (× 100).

Fig. 6.—After hysterectomy and nephrectomy; spinal deformity from caries of three upper lumbar vertebræ.

1. Shoemaker, G. E.: Ann. Surg., December, 1909.

suddenly developed a motor paralysis of both lower extremities without impairment of sensation. She had previously been moving freely about the bed. This impairment increased rapidly for seven days after which some improvement in motion occurred. The patient became unwilling to wear a plaster jacket and was discharged at her own request forty days after the nephrectomy.[2]

Microscopic Examination of Tumor.—Dr. G. Canby Robinson, the pathologist of the Presbyterian Hospital, kindly contributes the following description of the microscopic appearances of the renal tumor: "The tumor mass, which measures 18 by 12 by 9 c.m., takes roughly the shape of an irregularly enlarged kidney. It is roughened by slightly bulbous swellings, especially at the lower end. These swellings have a dark red and purple color. The tumor is firm in consistency. In one place there is a cavity which appears to be the remains of the peivis of the kidney. On section the kidney is found to be almost replaced by a tumor mass and only at the upper end is kidney tissue seen. Here the cortex is pale, almost white, and swollen, and glomeruli cannot be seen. The tumor structure is pinkish-yellow in color and rises slightly above the cut surface, through which fine bands of connective tissue run. At places the tissue is opaque, while in some areas it is translucent and colorless, resembling hard starch. Microscopic sections show kidney tissue only occasionally. When it is seen, there are a few glomeruli and compressed tubules scattered through large masses of connective tissue. The tumor is composed of fine strands of connective tissue, which grow out apparently from the increased connective tissue of the cortex, and which extend in a branching papillomatous manner in all directions. The connective tissue forms a stroma of the main tumor cells which lie on both sides of the fine connective tissue strands. There are large cuboid or columnar epithelial cells, practically always lying in a single layer, possessing large vesicular nuclei with nucleoli, and resembling large tubular epithelium. Tubule-like structures are often seen. Cysts formed by the walls of connective tissue and epithelium are frequent, and small masses of blood are present. The epithelial cells do not appear to have undergone malignant changes, but in one or two places small nests of cells are arranged in a rather suspicious manner."

Diagnosis.—Papillomatous cystadenoma of the kidney. No definite signs of malignancy.

Watson and Cunningham[3] state that the adenomas of the kidney are both malignant and benign.

The papillary type usually prevails, but the alveolar is likewise common. The relation between the benign and malignant adenoma is obscure. The majority of pathologists believe that the two are identical, and that they differ from each other only in a clinical sense. There are transition forms from adenoma to carcinoma, although the transition is not a sharp one. It is probable that many of the malignant adenomata are benign in the first place, and that malignancy supervenes. It is impossible to say how long the disease has existed in the benign form, because the tumor may be unrecognized for many years.

In a series of ninety-one tumors of the kidney examined at the Massachusetts General Hospital, four were of the type of large papillary cystadenomata of the kidney.[4]

The accompanying photomicrographs of the tumor tissue illustrate many of the characteristic features of the disease.

Respiratory Signs of Surgical Anesthesia.—Though marked deepening of the respiration may precede, be synchronous with or follow whatever emotional excitement there may be, at any rate it is generally indicative of the early accomplishment of surgical anesthesia.—J. B. Bogan, in *New York Medical Journal.*

2. August, 1910, ten months after nephrectomy, patient is reported as doing light housework.
3. Genito-Urinary Diseases, II, 231.
4. Nelson and Cunningham: Genito-Urinary Diseases, p. 220.

A COMBINED FORCEPS AND TONSILLAR SEPARATOR

A NEW TONSIL SNARE

CULLEN F. WELTY, M.D.
SAN FRANCISCO

In the enucleation of the tonsil I have found this combined forceps of value. Because of its length, all parts of the pharynx can be easily reached without interfering with other instruments. Because it can be used as a tonsil separator as well as a sponge carrier, not losing time consumed in changing instruments, the work is more quickly done. Because of the bluntness of the instrument the capsule of the tonsil cannot be punctured.

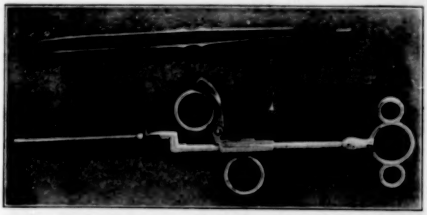

Fig. 1.—Combined forceps and tonsillar separator.

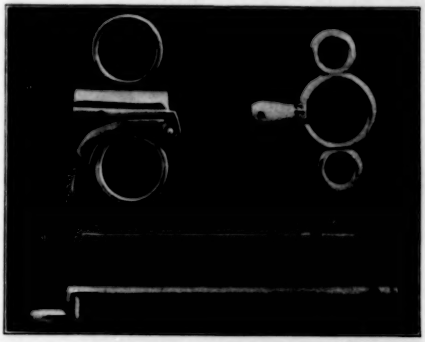

Fig. 2.—Showing parts of combined forceps and separator.

In order to use this instrument it is necessary that the tonsil be drawn taut with another forceps. An incision is then made at the point where the mucous membrane joins the tonsil, which will uncover the capsule, and should begin in front and be carried posteriorly until it begins to descend. Through this incision the tonsil is easily dissected or peeled out.

Directly after removal of the tonsil there is usually considerable hemorrhage. This forceps on account of the bend in the end is useful in making pressure to prevent an excessive loss of blood.

I have never been called to the hospital because of subsequent hemorrhage except in one instance, and in that the tonsil was not entirely removed. I am certain that

the blunt dissection with this instrument has given the good results obtained.

The features recommending this new snare are as follows: 1. It is strong, heavy and will not get out of order. 2. It locks together, instead of having screws or fasteners. 3. It is easily kept clean. 4. It is easily and quickly threaded. 5. It has an entirely new device for fastening the wire; when once clamped the harder you pull the tighter it becomes.

Shreve Building.

DIFFUSE IDIOPATHIC HYPERTROPHY OF THE MAMMARY GLANDS OF THE FEMALE *

A REPORT OF A NEW CASE AND A CONSIDERATION OF THE ETIOLOGY AND PATHOLOGY BASED ON DATA OF RECORDED CASES

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REPORT OF CASES

The following clinical history of the case was furnished by Dr. H. Matthey of Davenport, Iowa:

Patient.—The patient, a girl 13 years of age, when examined August, 1903, was 5 feet and 5 inches tall, weighed 101 pounds and was found to be of a nervous temperament.

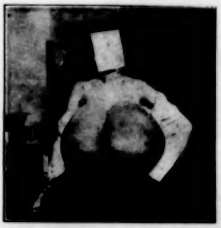

Fig. 1.—Patient with mammary hypertrophy; from photograph taken shortly before amputation of the left gland.

Family History.—The patient's parents were both living and well, her father being 39 years of age and her mother 36. She had one brother and one sister, both living. In none of these other members of the family was there any undue enlargement of the mammary glands.

Personal History.—The patient had had the usual diseases of childhood. Enlargement of the breasts began in the early part of June, 1903, and continued at such a rate that in August she was taken to a physician who estimated that each breast weighed about 8 pounds. Pressure applied by means of a bandage and maintained for several months was without benefit. In October when the patient first consulted me, the breasts weighed about 12 pounds each. Operation was advised, but refused. She now drifted into the hands of quacks who treated the condition in various way, without giving any relief. In July, 1904, she returned to me in poor general condition, feeble, anemic and emaciated. Her weight was 106 pounds, a little more than half of which was contributed by the breasts. Because of these facts, it was deemed advisable to remove only one breast at a time (Fig. 1). The first operation was undertaken July 14, 1904. The amputated left breast weighed 28 pounds. After being two weeks in the hospital, she was allowed to go home to recuperate for the second operation. At this time her weight was 79 pounds. During the following two weeks she gained 13 pounds and returned for the operation, weighing at this time 92 pounds. The right breast was amputated Aug. 12, 1904. It weighed 26 pounds. Recovery was uneventful, healing being by primary intention. Patient remained in hospital two weeks and returned home in good general health and weighing 75 pounds. Six weeks after the second operation she menstruated for the first time and has been regular since. She was married in 1909 and has been delivered of a six-months developed child since. At present the general health of patient is good; weight, 115 pounds; height, 5 feet 9 inches.

PATHOLOGY OF SPECIMENS

This was essentially the same for the two glands.

Gross Pathology.—Shape: Both glands, which were rather spherical in shape and pendulous while attached to the body of the patient, became considerably flattened out between the skin surface and the base after their removal.

Size: The left gland, which was the larger, was, after removal from the body, 18 inches in diameter and 8 inches in thickness. Its greatest circumference was 58 inches and it weighed 28 pounds. The right gland was 14 inches in diameter, 7½ inches in thickness; its greatest circumference was 45 inches and weighed 26 pounds.

Fig. 2.—Base of left gland, showing lobulated and encapsulated appearance.

Surface Contour: The skin surface was smooth, being tightly stretched over the underlying gland substance. The nipple of each of the glands had become flattened out and the areola more diffuse, but less distinct than normally. The bases of the glands were distinctly lobulated; the lobulated areas varying from one to four inches in diameter (Fig. 2). The outlines of the glands at the base were so distinct as to be apparently well encapsulated.

Consistency: The glands were moderately soft in consistency. This was quite uniform throughout the gland mass, although on cut section certain areas were found to be much more firm in consistency than others. These were not distinct and circumscribed, but fused gradually with the more soft areas. A number of rather large ducts, some with a diameter of as much as ⅛ of an inch were visible on the cut surface. The

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

subcutaneous adipose tissue had entirely disappeared. Only a small amount of fat was still noticeable about the base of the gland (Fig. 3).

Color: The cut surface of the tumor was of a whitish-pinkish gray color. The pinkish tint was more marked in the firm than in the soft areas.

Microscopic Pathology.—Section from Firm Portion of Gland: The section consisted principally of full developed fibrous connective tissue with a fair number of capillary blood-vessels. The gland elements were found somewhat grouped in areas, corresponding to the lobules; the acini, however, were much more widely separated than in the normal gland. The acini which were of variable size, some quite large and many dilated, were lined by a single layer of a low columnar (almost cuboidal) gland epithelium, resting on a basement membrane consisting of flat cells. The lumen was free from

Fig. 3.—Cut surface of right gland, showing dark areas of glandular tissue, light areas of more pure connective tissue, and open spaces representing dilated ducts.

contents, except in a few in which debris, consisting of degenerated and desquamated cells, was found.

Section from Soft Light-Colored Portion of Gland: This section consisted almost entirely of fibrous connective tissue with only a very few gland elements. The connective tissue, which contained only a few widely separated nuclei, was somewhat edematous. There were numerous capillary blood-vessels and a number of fat cells.

Section through Skin, including a Portion of the Gland Substance of Medium Consistency: This section showed the connective tissue of the hypertrophied gland to be continuous with that of the subcutaneous tissue and the corium. Except for a few fat cells, the subcutaneous adipose tissue had entirely disappeared. The elastic fibers of the corium were fully as abundant as in the normal skin. I was unable to find any elastic fibers in the substance of the gland proper except, of course, in the larger blood-vessels.

Section from Base of Gland, Including the "Capsule": The "apparent" capsule of the gland was found to consist of condensed gland substance consisting of both gland and connective tissue elements. The glands were somewhat flattened.

Summary of Pathology.—The process was a diffuse hypertrophy affecting all parts of both glands rather uniformly and involving both the glandular and connective tissue elements, the increase affecting principally the latter. The gland acini were lined by a single layer of low columnar (almost cuboidal) epithelium, were larger than normal and more widely separated by intervening connective tissue, which was of the fully developed fibrous type. Capillary blood-vessels were numerous.

REVIEW OF CASES REPORTED

Diffuse idiopathic hypertrophy of the mammary glands is a rare condition. Several authors have collected data from a number of cases, but no attempt to collect all cases reported has been made for some time. In 1902 Kirchheim[1] collected most of the cases reported up to that time. I have reviewed the literature and have

Fig. 4.—Photomicrograph of dense glandular portion of right gland showing irregular variously shaped acini lined by a single layer of low columnar epithelium.

made an attempt to collect all cases reported to date and have summarized the essential data from these cases, so far as such has been available. In some instances I have not been able to secure the original report. In many more the data was very meager. In the majority of cases no description of the pathologic process was given, and I have little doubt but that I have included some cases that are not instances of "true" hypertrophy. I have purposely omitted a case of excessive adiposity of the mammæ, diagnosed clinically as diffuse hypertrophy, of which I have the specimen, and another case concerning which I have been informed but of which no pathologic examination was made. I have not included in this paper the cases of mild degree of hypertrophy of the mammæ of the male (gynecomastia), or of senile parenchymatous hypertrophy (Bloodgood[2]), partial or

1. Kirchheim: Arch. f. klin. Chir., 1902, lxvii, 582.
2. Bloodgood: Surg., Gyne. and Obst., 1906, iii, 721.

localized hypertrophy, and the still more mild types of so-called hypertrophy occasionally seen associated with pulmonary tuberculosis.

Although I have summarized the principal data from the cases reported, I shall in this paper limit the consideration to the etiology and pathology of the condition.

Number of Cases Reported.—Aside from the one which I have just described, I have been able to collect reports of sixty-nine other cases of diffuse hypertrophy of the female mammæ. Of these seventy cases sixty-two were bilateral and six unilateral, three affecting the right and three the left gland. In two instances I was unable to learn which glands were affected.

Age.—Although Bittner[3] reported a case of hyperplasia (probably not true hypertrophy) of the mammary gland in a girl 6 months old, the age limit of the reported cases of true hypertrophy extends from 11 to 42 years, with practically every intervening year represented. The vast majority begin to develop about the time or soon after puberty or during gestation. Fifty-eight per cent. of the cases not associated with gestation developed between the ages of 11 and 16 and 40 per cent. during the fourteenth and fifteenth years of age.

Classification of Cases.—Cases of idiopathic hypertrophy may be classified into (1) those associated with gestation and (2) those not associated with gestation, most of which are closely related to puberty.

1. *Gestation Idiopathic Hypertrophy.*—Of the seventy cases eighteen were of this type. Fourteen of these were bilateral and four unilateral. The relation to gestation is clearly indicated by the fact that, after the termination of pregnancy, the condition subsides, although it does not return completely to the normal, and that it frequently reappears during subsequent pregnancies. The enlargement usually begins during the first pregnancy. Sometimes, however, it occurs for the first time during the second or third. In one instance it did not develop until the eighth pregnancy.

2. *Cases Not Associated with Gestation.*—The relation of puberty to cases of hypertrophy is suggested by the fact that 58 per cent. of the cases not associated with gestation developed between the ages of 11 and 16, the period during which puberty ordinarily occurs, and that in a large number of cases menstruation did not set in until after the enlarged glands were removed. In many cases, however, there seems to be no association with either puberty or gestation.

Etiology.—The real cause of this condition is unknown. Such factors as heredity, traumatism, undue sexual activity, general malnutrition, etc., which have been mentioned in connection with the process, seem to have nothing to do with it. Pathologically the process appears to be simply an excessive development of the normal enlargement as seen especially at puberty and during gestation. Presumably the causes which produce the normal enlargement are also at work on this pathologic form, the latter being produced either because of a large amount (or undue activity) of the same cause, or a lack of the inhibitory influences which, under normal conditions, limit the extent of the enlargement.

Recent experimental work has shown that the normal enlargement of the glands is not always due to the same cause. The work of Lane-Claypon and Starling[4] in producing an increase in the size of the mammary gland of virgin rabbits by the injection of extracts from the body of rabbit fetuses has shown very conclusively that the enlargement of the mammæ during gestation is through the action of a hormone produced in the fetus. That this may also be the cause of the idiopathic gestation hypertrophy is very probable, especially inasmuch as that condition subsides after the termination of the pregnant state.

The cause of the normal enlargement of the glands at puberty is not so well understood. The evidence at hand seems to indicate that a hormone in the ovaries is the principal factor responsible for the development of the mammary glands outside of pregnancy. If this proves to be the case it would seem that removal of portions of the ovaries would be indicated in the treatment of the condition. Up to the present time the only treatment that has been of value is amputation of the glands. Removal of portions of the ovaries has not been tried, so far as I know.

It is very doubtful whether or not the cessation or irregularity of the menses, noticed shortly before and during the hypertrophy in many of the cases not associated with gestation, is of etiologic significance. This may simply be a symptom of the condition, as it is a symptom of other diseases in which the vitality is lowered. On the other hand is to be noted the fact that the general health is usually not affected until after the disease is well advanced, whereas the cessation of the menses is frequently of sudden occurrence several months before the glands begin to enlarge

Gross Pathologic Morphology.—Shape: The enlarged glands stand out prominently from the chest wall for some time. Later their weight causes them to become pendent and often pedunculated, the gland substance assuming a rather spherical mass, drawn away from the muscles of the chest and hanging over the front of the abdomen, sometimes as far down as the knees. Their large size frequently causes the patient much discomfort and sometimes necessitates the patient remaining in a recumbent position.

Size: The size of the different glands may be compared (1) by their greatest circumference and (2) by their weight.

1. The greatest circumference of the individual glands for which figures are available varies from 20½ inches to 51½ inches, the average being 31½ inches. The average circumference of the hypertrophied left glands is one inch more than the right.

2. The weight of individual glands varies from 1⅓ pounds to 64 pounds with an average per gland (of all cases) of seventeen pounds. The weight of the combined glands of cases of bilateral hypertrophy varies from three pounds to 124 pounds (Durston's[5] case) with an average of 37 pounds. In most cases and on a general average, the left gland weighed a little more than the right. The average weight of the gland in the cases of unilateral hypertrophy is 15 pounds. In the cases reported by Durston[5] and myself the weight of the two glands exceeded the weight of the remainder of the body.

Surface Contour: The surface of the glands is quite smooth, and skin tightly drawn. The stretching of the skin usually causes the nipples to be flattened out. In one instance they were reported as being retracted; in two, as having become enlarged—in Delfis'[6] case, as large as a hen's egg. The pigmented areas also become less definite and distinct as the skin becomes stretched. The

3. Bittner, W.: Fall von Hyperplasie beider Mammæ bei einen 6 Monate alten Mädchen, Prag. med. Wchnschr., 1895, xx, 492.
4. Lane-Claypon and Starling: An Experimental Enquiry into the Factors Which Determine the Growth and Activity of the Mammary Glands, Proc. Roy. Soc., London, 1906, lxxvii, B, 505-522.
5. Durston: Phil. Tr. Roy. Soc., London, 1669.
6. Delfis: Jour. de physiol. exper. de Magendie, 1825.

skin remains quite freely movable over the underlying gland, even though the subcutaneous fat tends to disappear and the connective tissue of the skin gradually fuses with that of the gland. In the later stages, the skin may become thick and hard. In many instances the superficial veins become very large and stand out prominently as blue streaks.

Consistency: During the early stages the hypertrophic glands are firm and elastic, as they are during the normal enlargement at puberty or during the early part of gestation. Later, when they become larger and pendent, they also become flaccid. At first the glands usually feel somewhat nodular; later, however, these tend to disappear. Even when the process feels quite diffusely uniform through the skin, the cut surface may show areas considerably more firm in consistency than others. Such areas diffuse into one another gradually.

Color: The color of the cut surface of the hypertrophic gland in the few cases in which it has been noted, is apparently the same as under normal conditions.

Microscopic Pathologic Morphology.—Unfortunately, microscopic examinations of the specimens were made in only about twenty of the cases. In all of the cases not associated with gestation, it is recorded that there is an increase of both the glandular and the connective tissue elements. In most instances the connective tissue is reported as being principally increased, although in four cases special mention is made of the marked glandular increase. The gland acini are usually described as being larger than normal, more widely separated and sometimes found to be lined with several layers of gland epithelium. I am inclined to think that this last-mentioned phenomenon is due principally to the thickness of the section and the cutting of the acini in an oblique manner. In many instances the glands are considerably dilated and contain granular degenerated material. Such changes in the glands have been likened to the changes that occur in the glands during the early stages of pregnancy. The fibrous connective tissue is usually described as being of the fully developed type with, as a rule, very few nuclei, although some are mentioned as being quite cellular—which may, of course, have been due to an associated inflammation. In the three cases of idiopathic gestation hypertrophy in which a microscopic examination was recorded, the microscopic findings were like those of the mammary gland during pregnancy. Such findings, indeed, may reasonably be expected.

Pathological Physiology.—Gestation hypertrophic glands usually functionate as do the normal ones, although it is often difficult to nurse the infant because of the flattening out of the nipple. Those not associated with hypertrophy are functionless during non-pregnant conditions, although it has been possible to squeeze colostrum-like fluid from the ducts in some cases. Usually, also there is no lactation after the birth of a full-term child. In several instances, however, there was normal lactation in the glands that had been enlarged before the pregnant state. In one case associated with gestation, there was marked galactorrhea of eight months' duration.

Nature of Pathologic Condition.—Idiopathic hypertrophy has been regarded variously by different authors as a circulatory (edema), an inflammatory, a neoplastic or as a simple hypertrophic process.

In favor of its being an edematous process is the rather sudden onset that has been reported in several cases. In the cases of Durston[8] and Delbet,[7] for instance, the patients retired in the evening, slept quietly as usual and in the morning on awaking found themselves scarcely able to turn around. When they tried to get up, the weight of the suddenly enlarged glands caused them to sink back. Usually, however, the onset is very gradual.

Opposed to its being a circulatory process is the fact that there was no mention made of pitting on pressure in the cases reported, nor has the tissue of the glands removed been reported as edematous. For a long time the enlarged glands are firm and elastic and stand out prominently from the body; this would not be the case in edema. The increase in connective tissue following edema is in the nature of a fibrosis rather than an increase of all of the tissue elements. The slight edema which I found in my specimens and which accounts in part for their great shrinkage when placed in formaldehyd solution may readily be explained by the interference with circulation caused by the pendant glands.

There is really no evidence in favor of its being an inflammatory process. The pain sometimes noticed may readily be accounted for on the basis of pressure and a stretching of the nerves.

The neoplastic theory has several supporters. In Porter's[8] case, in which the glands weighed 17 and 43 pounds respectively, the diagnosis made was intracanalicular fibroma. Kirchheim[1] regards it as a diffuse fibroma. It is true that a section of the hypertrophic gland may be like one from a case of adenofibroma, but a tumor is usually thought of as a more localized and circumscribed process, especially if it is benign. The idiopathic hypertrophy, however, which pathologically is benign, is a diffuse process involving all parts of the gland. The fact that it may begin as a rather localized process, limited to a certain part of the gland, simply means that such represents the beginning point, probably the most susceptible tissue, just as one gland sometimes becomes involved before the other.

Considered from all standpoints, it must be regarded as a simple hypertrophic process involving all of the elements of the gland, but especially the part which at the time, is the most actively growing tissue, namely, the glandular tissue during gestation and the connective tissue at other times, especially during puberty.

The question has been raised as to whether or not cases of unilateral enlargements are cases of true hypertrophy. With a clinical history like those of bilateral hypertrophy, with the same pathologic condition, so far as we know, and an average weight of 15 pounds as against 17 pounds in case of the bilateral type, there is no reason, it seems to me, why they should not be regarded as identical. Indeed, in Van Swieten's[9] case, the unusual enlargement of one breast which occurred during pregnancy subsided after the termination of gestation. During the second pregnancy it again enlarged.

Associated Pathologic Conditions.—When the glands become of large size, the friction of the glands against a bracing bandage or supporting clothing frequently causes an excoriation of the epidermis chiefly at the most dependent portion. Such friction is apt to be followed by inflammation, abscess and fistula formation, eczema, erysipelas and gangrene. In one case, there was a hernial protrusion of gland-substance through an excoriated opening. Although Billroth[10] reported a case

7. Delbet: Traité de Chirurgie (Duplay Reclus). v.

8. Porter: Boston Med. and Surg. Jour., March 3, 1892.

9. Van Swieten: Commentaria in H. Boerhaave Aphorism de cognoscendis et curandis morbis, Leyden, 1764, A iv.

10. Billroth: Krankheiten der Brustdrüsen, Deutsche Chirurgie, 1890, Instalment xii, 69.

of sarcoma and Bloodgood[3] a case of carcinoma in a gland idiopathically hypertrophied, such glands do not appear to be any more prone to malignant tumor formation than under other conditions. In several cases the axillary lymph-nodes were found to be enlarged. In the majority of these cases, there was some acute inflammation of the mammæ which readily accounted for the involvement of the lymph-nodes. In several, however, there was no recognizable acute inflammation of the mammæ. Even in such cases, the lymph-node enlargement was of a fibrous (chronic inflammatory) character. In no case has there been any metastatic formation of the hypertrophic mammæ.

GENERAL SUMMARY

1. Of the seventy reported cases of diffuse hypertrophy of the female mammæ, in eighteen the enlargement occurred during gestation; most of the others occurred about the time of or soon after puberty.

2. Of the seventy cases, sixty-two were bilateral.

3. Fifty-eight per cent. of the cases not associated with gestation developed between the ages of 11 and 16 and 40 per cent. during the ages of 14 and 15.

4. The etiology of the condition is obscure. It is very probably due to the action of the same hormones that produce the physiologic enlargements.

5. Pathologically, the condition is a simple diffuse hypertrophy, involving both glands and connective elements. The increase in the gland elements occurs principally in the cases occurring during gestation, whereas the connective tissue increase usually predominates in those not associated with that condition. The process appears to be essentially an exaggeration or continuation of the enlargements that affect the gland normally at puberty and during gestation.

6. The weight of the glands varies from 1⅓ to 64 pounds, the average per gland of all cases being 17 pounds. In one instance, one of the glands weighed 64 pounds and both glands, 124 pounds. In two instances the combined weight of the two glands exceeded the weight of the remainder of the body.

7. In cases associated with gestation, lactation is, as a rule, normal. In those hypertrophies not associated with gestation the glands seldom functionate, even after pregnancy.

Dubuque and Jefferson Streets.

ABSTRACT OF DISCUSSION

DR. A. S. WARTHIN, Ann Arbor, Mich.: I should like to ask Dr. Albert whether this woman was able to throw her mammary glands over her shoulder; a similar hypertrophy of the mammary gland is often seen in Hottentot women, who are able to throw their breasts over their shoulders and suckle their children, who are carried in slings on their backs. I should also like to know to what type of man this woman corresponded. Did she have any features that go with the Australoid type or Negroid type? Would there be any anthropologic interest in this case as an instance of reversion?

DR. JAMES J. TERRILL, Galveston: Was there any pain associated with the condition? I remember seeing specimens from a somewhat similar case in the early part of this year. The patient, a girl aged about eighteen, had what was diagnosed as diffuse virginal hypertrophy of the breast. Both breasts enlarged but did not weigh more than two pounds each. One breast had to be removed, however, on account of excessive pain, the cause of which was never discovered; but on removal of the first breast, the pain disappeared and the other breast gradually grew smaller in size. Sections presented an appearance practically identical with that of the sections in Dr. Albert's case.

DR. GEZER BAUGHMAN, Richmond, Va.: I saw a case in November, 1903, with Dr. George B. Johnson, in a young white woman. The left breast weighed 10¼ pounds; the right 7¾. The microscopic findings were almost the same as those in Dr. Albert's case—a true hypertrophy of the mamma—nonfunctionating, except that there was not so much dilatation of the acini and very little fat.

DR. HENRY ALBERT, Iowa City, Iowa: The patient was not able to throw her breasts over her shoulders. I did not see the patient; but I made careful inquiry of the clinician as to any peculiarities suggestive of reversion and was informed that there were none; nor did her parents present any unusual appearance. There was no pain except that which may be readily explained by the enlarged size of the breast. In the reported cases, however, there are a number associated with severe pain, and in a few instances pain was present from the beginning of the process.

A patient whom I saw three or four weeks ago presented considerable enlargement of the mammary glands. A diagnosis of diffuse hypertrophy was made. The process began about a year ago, but it was only during the last three months that the pain had become extreme. On examining the glands microscopically after removal we found nothing but fatty and a little fibrous connective tissue. One of the cases in the literature contains a reference to the fact that the hypertrophy was not due to glandular, but to fatty increase.

A STUDY OF MISTAKEN DIAGNOSES

BASED ON THE ANALYSIS OF 1,000 AUTOPSIES AND A COMPARISON WITH THE CLINICAL FINDINGS *

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The subject of this paper was suggested by my experiences in a weekly conference with senior medical students at the Harvard Medical School. At this conference the organs obtained from all the autopsies performed at the Massachusetts General Hospital during the week preceding are brought before the class. Before the demonstration of each set of organs I discuss with the students a typewritten summary of the clinical findings in the corresponding patient, including the history, the physical examinations, the reports on blood, urine, stomach contents and feces, the *x*-ray plates and all other data on which diagnosis was based during life. I never let anyone inform me beforehand of the autopsy findings. After we have committed ourselves definitely regarding the pathologic changes which we expect to find the hospital pathologist, Dr. Oscar Richardson, reads the autopsy protocol and demonstrates the organs.

In this exercise I have been forced once a week for three years to compare my diagnoses with post-mortem findings. It has proved so salutory and instructive, especially when I have been mistaken, that it has seemed to me well to summarize the results of a large series of comparisons between the judgments arrived at by a careful study of clinical data and the anatomic conditions revealed post mortem.

I. METHODS USED IN THE STUDY

I must first explain, as nearly as I can, the plan followed. It is not a simple matter to collate ante-mortem

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* Because of the space required, the article is slightly abbreviated in THE JOURNAL. It appears in full in the Transactions of the Section and in the author's reprints.

and post-mortem data in an intelligent way. One cannot simply read off the clinical diagnoses and note their correspondence or lack of correspondence with the anatomic findings, for:

1. It is often obvious when one reads the clinical record that the diagnosis has been copied from the autopsy protocol.

2. The clinical diagnosis may be so abbreviated as to omit important facts known during life. For example: When death occurs from heart disease the clinical diagnosis is often recorded merely as "mitral stenosis" without any statement regarding cardiac hypertrophy, dropsical effusions or terminal infections. Yet on reading the details of the record one may find evidence that the heart was enlarged, that a large amount of serous fluid has been removed from the abdomen and, perhaps, that some micro-organism had been isolated during life from the circulating blood. These facts warrant us in filling in the clinical diagnosis by the addition of a number of details. My comparisons, then, have been made between the diagnosis warranted by the recorded clinical data and the autopsy protocols.

3. In some cases it has been clear, after a little study, that the clinical diagnosis actually written on the records had been hurriedly filled in by an intern and did not represent the opinion of the attending physician. I recall one case in which the clinical diagnosis still stands as "neurasthenia" although the autopsy record shows that the patient died of cancerous pleurisy.

My comparisons, then, have been far from literal. In each case I have gone behind the recorded diagnoses and endeavored to reason out what diagnosis was justified by the facts as known during life. No other course was open to me if I was to avoid some quite ludicrous mistakes.

II. TYPES OF ERROR

In the accompanying tables I have attempted (a) to separate correct diagnoses from mistaken ones and (b) to subdivide the mistakes into errors of omission and errors of commission. By an "error of omission" I mean failure to find some lesion which in all probability contributed to kill the patient; for example, the failure to find a pneumonic solidification.

"Burnt-out" or obsolete lesions are often undiscovered during life and lead, therefore, to a discrepancy between ante-mortem and post-mortem findings, a discrepancy of interest but different from what I am now defining as an "error of omission." If, for example, the autopsy revealed pleural adhesions, and I am convinced from the written record and from my knowledge of the methods used in the hospital wards that these lesions did not contribute materially to the patient's last illness, and that no attempt was made to find these adhesions by testing the mobility of the lung borders or by any other method of investigation, I do not class the resulting discrepancy between anatomic and clinical results as an error of omission.

By an "error of commission" I mean the diagnosis during life of a lesion—such as cancer of the stomach—which autopsy shows is absent. This type of error is defined in contrast with some discrepancies regarding which we need not consider the autopsy as the court of last appeal. If, for example, a diagnosis of mitral regurgitation is recorded on the clinical record but not in the autopsy protocol, I consider this no proof that the clinical diagnosis is wrong. It is quite conceivable that the valve was insufficient during life owing to a muscular relaxation of which no convincing evidence is left after death. I have, therefore, attempted no comparison between the clinical and anatomic findings regarding mitral regurgitation. On the other hand, if mitral stenosis exists during life it should be demonstrable after death.

I shall now take up some of the statistics which represent our experience in the last thousand autopsies coming from the medical wards of the Massachusetts General Hospital.

III. DIAGNOSTIC ERRORS IN CERTAIN DISEASES OF THE HEART AND VESSELS

MITRAL STENOSIS

Correct diagnosis in	49 cases or 69 per cent.
Error of omission in	16 cases or 22 per cent.
Error of commission in	6 cases or 9 per cent.
Total,	71 cases

Most of these errors of omission were due to the fact that the patients were seen first within twenty-four hours of death, i. e., after the murmur had disappeared and at a time when very little evidence remained on which a diagnosis could be based.

Cases in which we mistakenly supposed that mitral stenosis existed are not so numerous as I had anticipated. Apparently we have learnt pretty well the lesson taught by Austin Flint nearly half a century ago. It seems to me well to emphasize here a fact often recorded, especially by English observers, but not sufficiently realized in this country. I refer to the presence of a presystolic murmur at the apex of the heart despite a sound mitral valve, not merely in cases of aortic regurgitation (as noted by Flint), but in any disease which has resulted in marked enlargement of the heart. In cases of chronic nephritis, pericardial adhesions, arteriosclerosis and hyperthyroidism, or any other cause, we often hear the murmur formerly identified with mitral stenosis. The murmur may be constant or transient. It may or may not be associated with a sharp, snapping first sound and an accentuated pulmonic second. It cannot be distinguished with any certainty from the murmur produced by mitral stenosis and will continue to lead us into error from time to time until some other and more accurate methods of diagnosis are discovered.

I have found it best systematically to disregard all presystolic murmurs heard at the apex of a markedly enlarged heart, unless the case has been under observation long enough for us to have recorded the murmur before the heart became markedly enlarged or unless we have a clear history of a long-standing infectious process, presumably involving the heart valves. In renal cases, arteriosclerotic cases and, indeed, in most patients beyond their fiftieth year, presystolic murmurs are of very little significance.

AORTIC STENOSIS

Correct diagnosis in	19 cases or 61 per cent.
Error of omission in	11 cases or 36 per cent.
Error of commission in	1 case or 3 per cent.
Total,	31 cases

I have been surprised to note that the diagnosis of aortic stenosis (always accompanied in this series by a regurgitant lesion) was correctly made in nearly two-thirds of our cases, and especially was I amazed that in only one case did we commit ourselves wrongly to this

diagnosis during life. It used to be a standing joke among our pathologists that the clinician always diagnosed aortic stenosis when only a roughening of the aortic arch was demonstrable post mortem. On the other hand, I have been equally astonished to learn that the pathologists found aortic stenosis so frequently where we had overlooked it during life. I am quite convinced that this lesion is often impossible of diagnosis by our present methods of physical examination. In this connection the following points have recently been impressed on me:

1. Aortic stenosis may exist despite the presence of an accentuated aortic second sound, although, as a rule, this sound is diminished or absent.

2. Aortic stenosis may exist in association with a "water-hammer" or "Corrigan" pulse, though the rule is against this. How these two facts are to be accounted for I have no idea.

3. With long-standing cases of "rheumatic" endocarditis involving the aortic valve in patients under 35 years of age, aortic stenosis is almost always present (as proved post mortem) whether there are any characteristic physical signs pointing to it or not.

AORTIC REGURGITATION

Correct diagnosis in	57 cases or 84 per cent.
Error of omission in	5 cases or 7 per cent.
Error of commission in	6 cases or 9 per cent.
Total,	68 cases

It will be noted that in the present series, as in that previously mentioned in my "Physical Diagnosis," our largest percentage of correct diagnoses in diseases of the cardiovascular system concern aortic regurgitation. This percentage was possible only because we have made it a rule to disregard diastolic murmurs unless there were vascular phenomena to correspond ("water-hammer" pulse, capillary pulse, etc.). Diastolic murmurs without these vascular phenomena have generally turned out, post mortem, to be associated with a sound aortic valve. I appreciate that the figures here presented regarding aortic regurgitation have less value than those relating to the stenoses, since it is impossible to deny that the aortic ring might stretch during life sufficiently to produce regurgitation and yet show no evidence of such stretching post mortem. Yet, for reasons which I cannot here take the space to present, I do not believe that the error attributable to this possibility is a considerable one.

CHRONIC MYOCARDITIS

Correct diagnosis in	13 cases or 22 per cent.
Error of omission in	15 cases or 26 per cent.
Error of commission in	31 cases or 52 per cent.
Total,	59 cases

I have given up making the diagnosis of chronic myocarditis, and I believe that the term should be stricken from our text-books on the practice of medicine. It is an anatomic condition, like acute interstitial nephritis, having no corresponding manifestations recognizable during life. A correct diagnosis of chronic interstitial myocarditis, of acute degeneration of the myocardium such as occurs in fevers, or of the fatty change observable in most cases of pernicious anemia, is wholly a matter of luck. There are no clinical symptoms and no physical signs constantly associated with any one of these conditions.

When a patient has suffered from well-marked angina pectoris and shows clear evidence of arteriosclerosis in the brain, the kidney or the peripheral arteries, we may guess that his coronary arteries are somewhat narrowed and that a fibrous myocarditis has resulted. But even then we may be wrong, as I have often been convinced post mortem. The evidence on which the diagnosis of myocarditis is ordinarily based points merely to a *myocardial insufficiency* such as may be produced by a great variety of causes without the presence of any granular, fatty or fibroid change in the heart. Further, the anatomic diagnosis of fibrous myocarditis post mortem is satisfactory only when it is positive. To say that a fibrous myocarditis does not exist one must have cut the heart into mince-meat and then sectioned and stained each morsel of the hash. The absence of gross fibroid changes demonstrable after a few knife-cuts into the ventricular walls, by no means excludes an extensive though microscopic fibroid change.

One of the most surprising things in this series of autopsies has been the not infrequent occurrence of gross fibroid myocarditis in hearts which were perfectly sufficient during life, and the still more frequent absence of any demonstrable lesion post mortem in hearts that were markedly insufficient during life. As will be seen by the figures quoted above we were wrong in more than four cases out of five in our diagnosis of myocarditis.

ARTERIOSCLEROSIS

Correct diagnosis in	131 cases or 60 per cent.
Error of omission in	77 cases or 35 per cent.
Error of commission in	12 cases or 5 per cent.
Total,	220 cases

Most of the correct diagnoses in this group rested on inferences from general knowledge of pathology rather than on physical examination. If a patient has symptoms pointing to a non-traumatic cerebral hemorrhage it is fairly safe to assert that cerebral arteriosclerosis will be found, especially if the sufferer is middle-aged or older. If angina pectoris has tortured a man for months, it is very probable that his coronary arteries are diseased.

THORACIC ANEURISM

Correct diagnosis in	12 cases or 50 per cent.
Error of omission in	10 cases or 42 per cent.
Error of commission in	2 cases or 8 per cent.
Total,	24 cases

In two cases a mistaken diagnosis of aneurism was made owing to too great reliance on *x*-ray findings, in the absence of other important evidence. In one case I believe that the mistake cost the patient his life. Supposing his malady to be incurable, we allowed him to use narcotics for pain to an extent that ultimately proved fatal. At autopsy there was no trace of aneurism or of any other sufficient cause for death.

The classical difficulty of deciding between thoracic aneurism and mediastinal tumor has occurred five times in this series; in every case the autopsy showed aneurism. As a result of these and other experiences in this field I have come to use the following rule: When still in doubt between aneurism and tumor after all proper methods of investigation have been exhausted call it aneurism.

Abdominal aneurism is distinctly rare in my field of work, occurring but three times in 2,000 autopsies. Our autopsy material includes a relatively small number of syphilitics. Possibly it is for this reason that I have been taught by experience that when we have our

annual or semi-annual discussion about the bed of a hospital patient who complains of epigastric pulsation ("aneurism or dynamic aorta?") the doubtful cases always turn out not to be aneurism, i. e., the patients recover and remain well when reassured.

CARDIAC HYPERTROPHY AND DILATATION

Correct diagnosis in	223 cases or 66 per cent.
Error of omission in	113 cases or 33 per cent.
Error of commission in	3 cases or 1 per cent.
Total,	339 cases

Had we relied wholly on palpation, percussion and auscultation for the estimation of the heart's dimensions I feel sure that our failures would have been far more numerous. Blood-pressure estimations have helped us greatly, and if we could have employed fluoroscopy in every case we could doubtless have done far better.

The distinction between dilatation and hypertrophy has not been successfully made in this series. What clinically seemed an acute dilatation has usually turned out after death to be a chronic hypertrophy and dilatation.

It will be noticed that in six of the seven types of cardiovascular disease thus far discussed, the percentage of failures ranges in the neighborhood of 33 per cent.; thus:

Aneurism	48 per cent.
Arteriosclerosis	40 per cent.
Aortic stenosis	39 per cent.
Hypertrophy and dilatation	34 per cent.
Mitral stenosis	31 per cent.
Aortic regurgitation	16 per cent.
Average	34 per cent.

In the acute infectious lesions presently to be discussed our record is so different as to indicate that from the diagnostic standpoint they belong in a different and less accessible class. But before passing to the consideration of these more difficult diagnostic problems I wish to return for a moment to some of the difficulties attending the diagnosis of mitral regurgitation. I have not attempted to estimate the number or the nature of our failures in the diagnosis of this lesion because we have, in my judgment, no standard by comparison with which we can get our bearings. But the study of hearts before and after death has further convinced me that mitral regurgitation (that commonest of all cardiac diagnoses) is not only an unverifiable but usually a superficial judgment—about as definite as tachycardia. What we chiefly need to know about mitral regurgitation is what is behind it. Does the orifice leak because of an infectious process involving the myocardium, because of a chronic nephritis which has thickened and stretched the heart, because of hyperthyroidism, beer or arteriosclerosis? Or, rarest of all, is there a purely mechanical deformity of the valve or valve curtains? In all cases, except those belonging to this last group, i. e., in at least nine-tenths of all cases in which we are likely to make the diagnosis of mitral regurgitation we should add it, like an appendage, to some other and more fundamental designation. Thus, such diagnoses as "chronic nephritis, hypertension, cardiac hypertrophy and dilatation with mitral regurgitation," or "arteriosclerosis, myocardial insufficiency, relative mitral incompetence," or "infectious arthritis and myocarditis with mitral leakage," should, I think, replace the great majority of those now standing on our record-books simply as "mitral regurgitation."

The origin, prognosis, course, probable complications and treatment—all that is most important about the case—is suggested not by the leakage but by the diseases which have produced it and are indicated in the earlier parts of the diagnoses above suggested. As I look over the annual reports of our hospitals and note the great number of cases recorded merely as mitral regurgitation, it seems to me hardly more sensible than if one made so many diagnoses of "short breath" or "cough."

ACUTE ENDOCARDITIS AND ULCERATIVE ENDOCARDITIS

Correct diagnosis in	23 cases or 39 per cent.
Error of omission in	32 cases or 54 per cent.
Error of commission in	4 cases or 7 per cent.
Total,	59 cases

ACUTE PERICARDITIS

Correct diagnosis in	11 cases or 20 per cent.
Error of omission in	38 cases or 70 per cent.
Error of commission in	5 cases or 10 per cent.
Total,	54 cases

Most of the errors listed in these two groups are, I believe, inevitable at the present time. There are usually no distinctive physical signs either of acute endocarditis or of acute pericarditis, especially when they occur in the terminal stages of chronic disease. Fortunately it makes at present very little difference in our treatment whether we recognize these items of a general infection or not.

IV. RESPIRATORY SYSTEM

LOBAR PNEUMONIA

Correct diagnosis in	116 cases or 74 per cent.
Error of omission in	23 cases or 15 per cent.
Error of commission in	18 cases or 11 per cent.
Total,	157 cases

Regarding these cases of lobar pneumonia two comments seem to me worth making. First, it should be explained that some of the successful diagnoses of lobar pneumonia were made without distinctive physical signs of a process of reasoning which issued in the judgment "That is the sort of case in which a terminal pneumonia might well occur." This sort of reasoning works backward from familiar disease-groups previously encountered post mortem. One recognizes during life one or more members of such a group and infers the presence of another. Alcoholism and trauma with an unexplained fever and leukocytosis is a familiar group pointing in the majority of cases to a larval pneumonia not revealed by the pulmonary signs. Such an inference is very far from being inevitable, yet experience has convinced many that reasoning of this type is valuable if used cautiously and provided it always goes hand in hand with a thorough study of the patient's history and of the present condition.

Another observation is suggested by the numerous diagnoses of pneumonia when this condition was not actually present. Such mistakes were especially common in patients who were comatose or partially so. The type of congestion or "settling" often found post mortem in the lungs of such sufferers may produce all the classic signs of a full-blown lobar pneumonia though absolutely no solidification; nothing but a soggy lung is discoverable after death. I have often had a similar experience in cases involving marked cardiac insufficiency with or

without a considerable degree of hydropericardium. The signs apparently of solidification at the left base (in the so-called "pressure area" of pericardial effusion) associated with fever, leukocytosis and cough have often led me to a false diagnosis of pneumonia no sign of which was discernible post mortem.

BRONCHOPNEUMONIA

Correct diagnosis in	31 cases or 33 per cent.
Error of omission in	60 cases or 64 per cent.
Error of commission in	3 cases or 3 per cent.
Total,	94 cases

One might imagine that the very large percentage of error in our diagnoses of bronchopneumonia arose from the inclusion of infants and young children whose lungs are notoriously apt to show after death (from whatever cause) unsuspected areas of bronchopneumonia. But this table contains only cases of adults. I excluded all the cases of younger patients because I felt from the start quite hopeless of successful prediction in this field.

I feel convinced, however, that we may apply to adults the old adage of the pediatric specialists: "When you have the signs of bronchitis but the patient is obviously too sick for (simple) bronchitis, call it bronchopneumonia."

I have been much impressed by a series of typhoid patients dying with the signs only of bronchitis but showing extensive bronchopneumonic areas post mortem, and I am inclined to believe that in many "bad colds" the patch of "sticky râles" which hangs on for a week or more in one or another lower lobe posteriorly represents in fact a bronchopneumonia.

PHTHISIS (ACTIVE)

Correct diagnosis in	32 cases or 59 per cent.
Error of omission in	16 cases or 30 per cent.
Error of commission in	6 cases or 11 per cent.
Total,	54 cases

MILIARY TUBERCULOSIS

Correct diagnosis in	28 cases or 52 per cent.
Error of omission in	20 cases or 37 per cent.
Error of commission in	6 cases or 11 per cent.
Total,	54 cases

In explanation of these tables we must note that:

1. I have left wholly out of the account the numerous cases of obsolete or healed phthisis.

2. The 30 per cent. of unrecognized cases was made up mainly of cases seen for the first time within a few hours of death, when all distinctions are blurred.

3. In the effort to recognize doubtful incipient cases we have frequently used radiography, but so far without getting any reliable information not obtainable by other methods. An increased resistance to the passage of *x*-rays is an excessively delicate but also a very general indication, capable of a multitude of explanations and produced by a multitude of causes other than tuberculosis and often indistinguishable from each other by radiographic evidence.

The correct diagnoses of miliary tuberculosis would have been much fewer had we not adopted some years ago the rule, "When a case is clinically one of tuberculous meningitis, call it miliary tuberculosis and you will rarely be contradicted at autopsy." Tuberculosis is practically never confined to the meninges, though in many cases miliary processes make themselves apparent only in the central nervous system.

V. URINARY SYSTEM

ACUTE NEPHRITIS

Correct diagnosis in	5 cases or 16 per cent.
Error of omission in	20 cases or 62 per cent.
Error of commission in	7 cases or 22 per cent.
Total,	32 cases

Some years ago I undertook a critical study of the urinary reports and post-mortem findings in the different types of nephritis. I was much impressed at that time with the large percentage of mistaken diagnoses of acute nephritis—especially the errors of omission. In the present study of another series of cases, the same facts claim attention. It must be stated at the outset that our material contains no cases of scarlet fever; very few of diphtheria and that, as we have no maternity department, our cases of the puerperal type are confined mainly to eclampsia. In the material so limited we find almost no recognizable cases of acute nephritis. Most of those which in former years we called acute we now recognize (thanks to blood-pressure measurements) as chronic with acute exacerbations. For prognosis, and in a lesser degree for treatment, this distinction is important.

Our cases of acute nephritis, recognized and unrecognized, belong mostly in one of three groups:

1. Those due to pneumococcus infections.
2. Those due to infection by the organism of septic endocarditis.
3. Those due to mercurial poisoning.

Our verified diagnoses of acute nephritis have been made chiefly by following these etiologic hints and not from the urinary findings. Given a case of mercurial poisoning, of general pneumococcus infection or of "malignant endocarditis," with or without arthritis, and it is fairly safe to predict that an acute nephritis will develop and will be demonstrated post mortem if the issue is fatal. But this is not a secure basis for diagnostic structures, and we have not yet been able to build much on this or on any other foundation. We doubt whether others can do better at the present time.

CHRONIC GLOMERULAR NEPHRITIS

Correct diagnosis in	53 cases or 74 per cent.
Error of omission in	9 cases or 12 per cent.
Error of commission in	10 cases or 14 per cent.
Total,	72 cases

CHRONIC INTERSTITIAL NEPHRITIS

Correct diagnosis in	25 cases or 50 per cent.
Error of omission in	19 cases or 38 per cent.
Error of commission in	6 cases or 12 per cent.
Total,	50 cases

In marked contrast with our failures in acute nephritis is our large percentage of success in chronic glomerular nephritis[1]—the type often termed chronic diffuse, chronic parenchymatous nephritis or secondary contracted kidney (Senator). Most of our errors were in

1. Judging by the averages of this whole study I consider anything over 66 per cent. of verified diagnoses as a "high" percentage of success, though I admit that even our best is far from brilliant.

patients seen only in the moribund state and the same is true of the failures recorded in chronic interstitial nephritis.

In distinguishing these two types of nephritis (i. e., those due probably to the results of early infection and those due to arteriosclerosis, wear and tear and senility) I have noticed that most of those associated with any considerable degree of anemia usually turn out to be of the glomerular type. Anemia and uremia are, perhaps, due to the same metabolic poison, while in the interstitial cases we have less anemia and less uremia—the symptoms being chiefly those of circulatory failure.

VI. NERVOUS SYSTEM

CEREBRAL HEMORRHAGE

Correct diagnosis in	34 cases or 67 per cent.
Error of omission in	4 cases or 7 per cent.
Error of commission in	13 cases or 26 per cent.
Total,	51 cases

CEREBRAL TUMOR

Correct diagnosis in	8 cases or 72 4/5 per cent.
Error of omission in	2 cases or 18 1/5 per cent.
Error of commission in	1 case or 9 per cent.
Total,	11 cases

"Cerebral hemorrhage" is here used in the broad sense of "apoplexy," including all sudden attacks of coma and paralysis due to thrombosis, to acute softening or to embolism of the cerebral arteries. It is confessedly impossible to distinguish hemorrhage, rapid thrombosis and embolism by any study of the resulting disturbances of function. With this understanding it may be said that our diagnostic campaigns in this field have obtained an average degree of success. I have been struck, however, with the very considerable proportion of cases which presented during life the ordinary features of apoplexy but showed after death only an arteriosclerotic degeneration of the cerebral arteries without hemorrhage, embolism, thrombosis or acute softening. These cases are like some of those on which Pal based his interesting theory of vascular crises[2] as an explanation of apoplectiform seizures without demonstrable gross lesions post mortem.

Of the small group of cerebral tumors here studied, I will merely say that although we usually were correct in predicting the presence or absence of tumor somewhere within the skull, the attempts at localizing the growth were failures in most cases.

SEPTIC MENINGITIS

Correct diagnosis in	23 cases or 64 per cent.
Error of omission in	8 cases or 22 per cent.
Error of commission in	5 cases or 14 per cent.
Total,	36 cases

TUBERCULOUS MENINGITIS

Correct diagnosis in	26 cases or 72 per cent.
Error of omission in	5 cases or 14 per cent.
Error of commission in	5 cases or 14 per cent.
Total	36 cases

Under the general title of "septic meningitis" I have included the epidemic meningococcus cases, together with those due to the pneumococcus and the pyogenic organisms, whether invading the meninges from the middle ear or elsewhere. I shall omit discussion both of this group and of the tuberculous cases following.

2. Pal: Gefässkrisen, Berlin, 1905.

VII. DIGESTIVE SYSTEM

GASTRIC CANCER

Correct diagnosis in	30 cases or 72 per cent.
Error of omission in	7 cases or 17 per cent.
Error of commission in	5 cases or 11 per cent.
Total,	42 cases

PEPTIC ULCER (GASTRIC OR DUODENAL)

Correct diagnosis in	9 cases or 36 per cent.
Error of omission in	14 cases or 56 per cent.
Error of commission in	2 cases or 8 per cent.
Total,	25 cases

HEPATIC CIRRHOSIS

Correct diagnosis in	19 cases or 61 per cent.
Error of omission in	9 cases or 30 per cent.
Error of commission in	3 cases or 9 per cent.
Total,	31 cases

Our relatively successful dealing with the neoplasms in this table forms a sharp contrast with the shocking failures which were the rule when the diagnosis of peptic ulcer was attempted. Among the fourteen ulcers which we failed to recognize during life nine were gastric and five duodenal. In two cases (Autopsies 637 and 1077) the patient had cirrhosis of the liver (ante-mortem and post-mortem diagnosis) and the gastric hemorrhages were attributed to this. Two patients (Autopsies 2278 and 3441) entered the hospital with the history, symptoms and signs of meningitis, which was confirmed at autopsy. In one case the history distinctly suggested ulcer; in the other, a tuberculous case, there were no symptoms pointing to the gastro-intestinal tract. Seven patients (Autopsies 526, 1161, 1829, 1861, 2024, 2135, 2388) entered the hospital acutely ill with disease outside the gastro-intestinal tract (lobar pneumonia, cancer of the uterus with extensive metastases, cardiovascular degeneration, uremia, congenital syphilis, apoplexy, diabetes). One of these patients, a diabetic boy of 17, had had for three months stomach symptoms quite compatible with gastric ulcer though not characteristic of it. I doubt whether any surgeon would have wished to operate on him in his toxemic and emaciated condition. The other six of the seven patients last referred to had no gastric signs or symptoms whatever.

There remains a group of three cases out of the fourteen in which a diagnosis should, perhaps, have been made. One of them (Autopsy 1586) was seen twice by Drs. Maurice H. Richardson and F. G. Balch, who could make no diagnosis and advised against exploration on account of uncompensated heart disease (autopsy showed insufficiency of the mitral, aortic and tricuspid valves). The second case (Autopsy 1604) had a typical ulcer history, but the abdominal symptoms were obscured or disregarded on account of what was taken to be an acute pneumothorax. Autopsy showed a "subphrenic hypopneumothorax" pushing the diaphragm up to the level of the third rib in front. In view of the frequent occurrence of this type of subphrenic abscess after perforation of a peptic ulcer I think this diagnosis should have been made. The third patient (Autopsy 1064), a woman of 68, would permit no examination, far less exploration of her abdomen.

In two men, each 35 years old (Autopsies 1238 and 1405) we made the diagnosis of peptic ulcer and were contradicted at the autopsy. One had had "dyspepsia" for four years and was seized the night before he entered the hospital with violent epigastric pain and tenderness not associated, however, with muscular spasm. At autopsy next day a cyst of the pancreas was found to have ruptured into the peritoneum with a resulting general peritonitis. The other man came to the hospital for persistent vomiting of ten days' duration. Soon after entrance he vomited 10 ounces of pure blood. He had also marked cerebral symptoms attributed by a neurologic consultant to cerebral syphilis. At autopsy the stomach showed nothing abnormal. Death was due to chronic interstitial nephritis.

VIII. MISCELLANEOUS

TYPHOID FEVER

Correct diagnosis in	53 cases or	92 per cent.
Error of omission in	0 cases or	0 per cent.
Error of commission in	5 cases or	8 per cent.
Total,	58 cases	

DIABETES MELLITUS

Correct diagnosis in	19 cases or	95 per cent.
Error of omission in	0 cases or	0 per cent.
Error of commission in	1 case or	5 per cent.
Total,	20 cases	

In typhoid and diabetes the percentage of errors is notably smaller than in the previous groups. This is what one would expect from the sharply cut symptomatology and semeiology of these diseases. Had these cases included any prior to the discovery of the Widal test the proportion of mistakes in the typhoid group would no doubt have been much larger.

The error in the diagnosis of diabetes occurred in a case which was under observation only a few hours before the fatal termination. What seemed to be diabetic coma turned out to be apoplexy with symptomatic glycosuria. It was afterwards learned that the urine had been examined previous to his seizure and had contained no sugar. His previous history showed nothing pointing to diabetes. It must be noted, however, that post-mortem examination is not capable of refuting a well-fortified ante-mortem diagnosis of diabetes.

The five cases in which typhoid was erroneously supposed to exist are of considerable interest and warrant brief analysis did space permit. They confirm the assertion which I have elsewhere made[3] that typhoid is simulated (in New England) by only two other diseases, tuberculosis and general septicemia. In this series two of the five cases supposed to be typhoid turned out to be cases of miliary tuberculosis; the other cases were general septicemia.

SYPHILIS

Cerebral syphilis is a diagnosis quite frequently made at the Massachusetts General Hospital, but so far as I know it has never been both made and confirmed during the years (1899 to 1909, inclusive) covered by this report. Two cases with all the traditional evidences of cerebral syphilis, one of which had a positive Wassermann reaction, turned out to be tuberculous meningitis at autopsy; another case showed only chronic interstitial nephritis; in a fourth case multiple thromboses had occurred in the great venous sinuses of the cranium without any of the recognized causes for such thrombosis. In the only case actually characterized by intracranial syphilitic lesions post mortem they were not recognized in life.

Two other cases of syphilis have recently taught me lessons. One had the ordinary evidences of Banti's disease, splenomegaly and marked anemia followed some months later by ascites. The history gave no hint of syphilitic infection. Dr. Wilder Tileston found a perforation of the nasal septum and suggestive irregularities in the surface of the scalp and of the shin bones, just in time to save the patient from splenectomy. Under potassium iodid and mercury the ascites and anemia disappeared, the spleen shrunk to one-half its former size and the patient made a complete and lasting symtomatic recovery.

The other patient, said to have malaria, had chills, intermittent fever, enlarged spleen and malarial organisms in the blood. I found the liver also enlarged, no malarial organisms in the blood, and obtained a full history of previous syphilitic infection. All symptoms promptly disappeared a year ago under antisyphilitic treatment and have not recurred since.

In order to keep this paper from extending beyond its already inordinate length, I shall try to condense the rest of my data into maxims which should have the merit of brevity if not of wit or clearness, incorporating my summary and conclusions with them.

SUMMARY AND CONCLUSIONS

1. Never make a diagnosis of uremia in a patient seen for the first time in an acute illness characterized by coma or convulsions. Such diagnoses rarely turn out right.

2. Never make a diagnosis of ptomain poisoning without definite chemical evidence. General peritonitis or a tabetic crisis is usually the correct diagnosis.

3. Make no diagnosis of hysteria, neurasthenia or psychoneurosis in a patient whose symptoms begin after the forty-fifth year. The actual diagnosis is likely to be arteriosclerosis, hyperthyroidism, dementia paralytica, or pernicious anemia.

4. Diagnoses of tertian malaria in patients whose symptoms resist quinin more than three days are almost invariably wrong.

5. Bronchial asthma beginning after 40 usually spells heart or kidney disease.

6. Epilepsy beginning after 40 usually means dementia paralytica or cerebral arteriosclerosis.

7. Typical migraine is often a symptom of unrecognized brain tumor or chronic nephritis.

8. Most cases of "bronchitis" mean tuberculosis, bronchopneumonia or multiple bronchiectasis cavities.

9. Aside from the immediate results of acute infections (such as scarlet fever, diphtheria, tonsillitis and pneumonia) "acute" nephritis usually turns out to be chronic.

10. Acute gastritis and gastralgia usually mean appendicitis, gall-stones or peptic ulcer.

11. Pus in or near the liver is often mistaken for serous or purulent pleurisy, for it produces identical signs in the right chest posteriorly.

12. An *x*-ray of the shin-bones may give the first hint of an active syphilitic process in the joints or internal viscera.

3. Cabot: The Three Long-Continued Fevers of New England, Boston Med. and Surg. Jour., 1908.

13. Systolic or presystolic murmurs, heard best at the apex of a markedly enlarged heart, rarely mean valve lesions.

14. Diastolic murmurs at the base of the heart are very uncertain evidence of aortic disease unless there are characteristic jerkings in the peripheral arteries.

15. Myocarditis is a diagnosis which should never be made clinically.

16. Besides the direct evidence afforded by the history and the various methods of physical and chemical examination, diagnosis profits much by taking account of certain familiar pathologic chains or groups of them. Given one or two members of the group it is often wise to act as if the other were present, provided, of course, that the direct evidence in no way contradicts us.

17. Cerebral localization applied to tumors, hemorrhages and the like is still in its infancy.

18. The clinical diagnosis of the so-called diseases of the blood is the easiest and safest in medicine.

190 Marlboro Street.

THE ELECTROCARDIOGRAM IN CLINICAL DIAGNOSIS *

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BALTIMORE

In the study of cardiac function by instrumental means, a number of methods have been employed, each of which has yielded information which was not obtainable with the others. The study of the arterial pulse has taught us much regarding the relation between cardiac output and peripheral resistance; the study of the blood-pressure has taught us to estimate accurately the force of the heart-beat and the factors which control it; the *x*-ray examination has given us a means of observing the changes in volume of the four chambers of the heart; and the study of the venous pulse has enabled us to detect many changes in the origin and propagation of the cardiac contraction. In spite of the great additions which these methods have made to the study of the heart, there is still much information that they are unable to furnish, and some of this is yielded by studying the electric variations produced in the body at each beat of the heart.

Considered electrically, the human body may be regarded as a battery with the two arms and two legs as its natural and most convenient poles. Owing to processes going on in the body and in the skin, the potential at each of these poles is different; hence, if any two of these limbs are dipped into zinc pans containing salt solution and connected with one another by wires, a constant current is generated; and if a very sensitive galvanometer is placed in the circuit it is deflected by this "body current"—or, as it is usually termed, "rest-current."

The rest-current is due simply to the difference of potential between any two parts of the body and is independent of any muscular contraction. Besides this, another current (action-current) is set up whenever any muscle acts, and this action current adds its effect to that of the body current already present and causes the galvanometer to swing each time that it is generated, that is, every time the muscle acts. Action of any muscle can cause such action-currents, and even small movements of the fingers placed in the salt solution are accompanied by very large deflections; but if the patient is kept perfectly quiet and there is no tremor the only important deflections are those caused by the cardiac action.

The electric variations accompanying the cardiac action have an intensity of from 1/1000 to 3/1000 of a volt, and consequently could not be studied accurately until an extremely delicate galvanometer had been invented. Professor Einthoven of Leyden has invented such a galvanometer, which consists of a very fine quartz

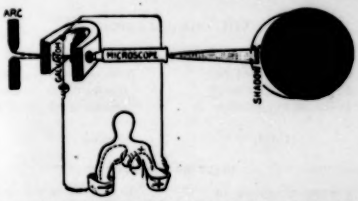

Fig. 1.—Diagram of a simplified electrocardiograph, showing also the distribution of the electrical changes about the heart. The patient is supposed to be seated with his hands immersed in the jars of salt solution (+ and —).

or platinum thread, so fine that it is barely visible and so light that it can scarcely be weighed by the most delicate balances. This thread is suspended in the field of a permanent magnet or of an electromagnet. When the current from the body passes through the thread, it charges the latter and causes it to be attracted or repelled by the poles of the magnet, and the thread is so light that it is deflected without delay by these changes in the electromagnetic field. The movements of this thread are magnified with a powerful microscope, illuminated with an arc-lamp, and the shadow is photographed on a moving drum 6 or 8 feet away (Fig. 1). By this method, it is possible to study very small currents.

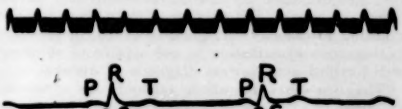

Fig. 2.—Typical electrocardiogram from a normal man. Current led off from right hand and left foot (D 2). Upper line, timer marking fifths of seconds.

It is even possible to connect distant points with the galvanometer and thus to record the hearts of patients who are lying in their beds in the wards, or to connect the laboratory with distant hospitals; but grounded circuits cannot be used for this purpose. Professor Einthoven has made most of his tracings from patients in Professor Nolan's wards of the Leyden hospital, a mile and a half away from his galvanometer.

Even 1/1000 of a volt is sufficient to cause a marked deflection, 4 mm. with our instrument, 1 cm. with the larger instruments. In Baltimore we have worked with the small permanent magnet and a platinum filament. This has given in the main very satisfactory results, but we hope, next year, to have the larger and more delicate apparatus.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St Louis, June, 1910.

The electrical changes during each cardiac cycle are quite characteristic and correspond to the successive activities of the atrium and the ventricle. The base where the atria are situated becomes negative before the atrial activity, which is followed by another, due to the ventricular activity.

As will be noticed, the variations in potential are a little different if they are led off at different parts of the body, and the curves thus derived differ slightly from one another. Since Einthoven's first work, it has been customary to take records from three different derivations: the right hand and left hand—designated as the first derivation (D1); the right hand and left foot, the second derivation (D2); and the left hand and left foot, third derivation (D3). The second derivation shows the greatest oscillations; the third derivation is the most important for determining hypertrophy of the left ventricle.

The typical form of electrocardiogram is shown in Figure 2. As can be seen, the first wave (P) is a small

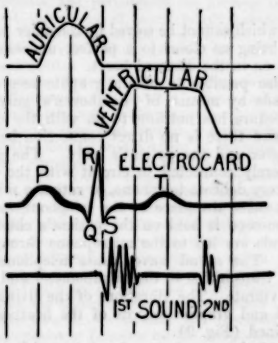

Fig. 3.—Diagram showing the time relations between the waves of the electrocardiogram, the heart sounds and the contractions of auricles and ventricles.[1] Vertical divisions indicate tenths of a second.

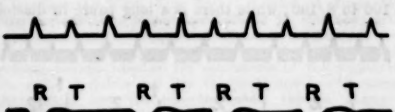

Fig. 4.—Upper line, timer, marking fifths of seconds; lower line, electrocardiogram. Inversion of the R and T waves due to hypertrophy of the left ventricle. Current led off from left hand and left foot (D 3). The P wave, due to the atrial activity, is absent.

one due to activity of the atria (P wave). This is followed by a very small depression of the curve below the base line, Q depression. Then comes the wave due to the action of the ventricles, a large wave (R), which sets in suddenly and as suddenly subsides, falling below the base line (S depression), and this wave in turn is followed by a small second wave (T) which occurs during the middle of systole (Fig. 3).

1. The short interval between the beginning of the R wave and the beginning of the rise in intraventricular pressure is interpreted by Kahn as due to the phenomena of conduction within the heart. In experimental ventricular extrasystoles the electric and mechanical changes are absolutely synchronous.

The most recent investigations of Kahn in Hering's laboratory indicate that the electrical variations and the mechanical action are synchronous, and that the electrical variations do not precede the contractions as was first supposed, although the former slightly precede the rises in intra-atrial and intra-ventricular pressures. We have, however, used the term "activity," rather than contraction in the above descriptions, as this leaves the matter open pending confirmation of Kahn's work.

The mode of origin of the T wave is more obscure, as there is no separate contraction which corresponds to it, but the two ventricular waves (R and T) correspond closely to the first and second waves of the diphasic variation which is seen in the contraction of any

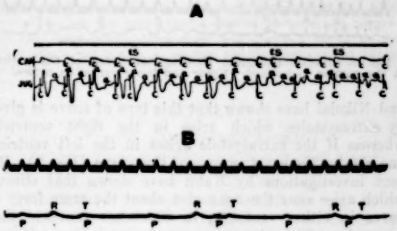

Fig. 5.—A, venous and carotid arterial pulse from a patient with complete heart-block and pulse-rate of 33 per minute. B, electrocardiogram from the same patient. Upper line, timer in fifths of seconds, lower line, electrocardiogram. The rate of the atria is about twice that of the ventricles but the complete dissociation between the two is more readily discernible in the electrocardiogram than in the venous tracing.

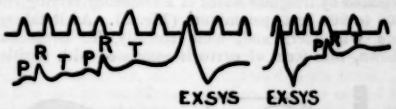

Fig. 6.—Electrocardiogram showing extrasystoles which probably arise in the right ventricle. Upper and lower lines as before.

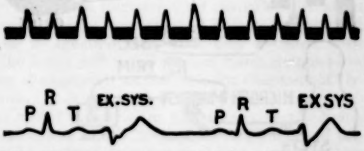

Fig. 7.—Electrocardiogram showing extrasystoles which probably arise in the left ventricle. Upper and lower lines as before.

muscle whatever. Moreover, the form of the electrical curve is scarcely due to the algebraic sum of the curves of the two ventricular contractions, as claimed by Kraus and Nikolai, since the same curve was obtained by Sanderson and Page and, more recently, by Gotch in the frog and tortoise, although these animals have only one ventricle (Fig. 3.)

So much for the normal electrocardiogram. When the left ventricle is hypertrophied, the electrocardiogram undergoes a very definite change, and the first ventricular wave (R) becomes inverted (Fig. 4). Occasionally the T wave is inverted also.

The electrocardiogram is also particularly useful in the diagnosis of heart-block. Figure 5A shows a venous

and arterial tracing from a case of permanent, complete heart-block with the auricular rate about twice the ventricular. Figure 5B is an electrocardiogram of the same case, in which, as will be seen, the complete dissociation is much more easily made out.

One of the most interesting variations is that which is obtained from the extrasystoles, as is seen in Figure 6. It will be noticed that the wave accompanying the extrasystole is unusually large and slow. It is so different from the normal beats which precede and follow it that one can tell by merely watching the string just when an extrasystole takes place. It will be noticed that the first wave is very large, that it subsides very slowly and is followed by a very large depression (Fig. 6). Kraus

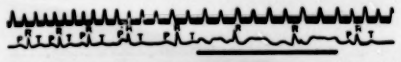

Fig. 8.—Electrocardiogram showing fibrillation of the auricles in the portion underlined. Upper and lower curves as before.

and Nikolai have shown that this type of curve is given by extrasystoles which arise in the right ventricle, whereas if the extrasystole arises in the left ventricle one obtains the exact inverse of this curve (Fig. 7). Recent investigations by Kahn have shown that stimuli which arise near the apex give about the same form of curve in either ventricle, in whichever ventricle they may arise. These types are not absolutely distinctive.

If the extrasystole arises in the atria, the curve is preceded by a P wave, and it often resembles the normal electrocardiogram much more closely.

Occasionally one encounters cases in which the P wave due to the atrial activity has disappeared, and is replaced by irregular waves of a frequency varying from 300 to 900 beats per minute (Fig. 8). As Rothberger and Winterberg and, more recently, T. Lewis have shown, this form of curve is associated with fibrillary

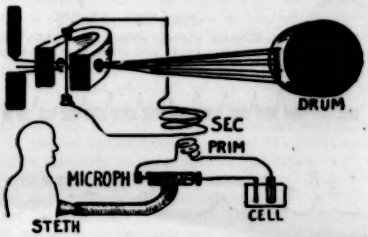

Fig. 9.—Scheme of simplified arrangement for the recording of the heart sounds. *Steth*, stethoscope; *Microph*, microphone; *Prim*, primary coil; *Sec*, secondary coil.

contractions of the atria, and is especially frequent in the permanent, absolute arrhythmia. This curve is obtained most frequently when the current is led off from the third right interpace and left interscapular regions—that is, when the circuit passes through both atria. Our own curve is obtained from the second derivation in the same patient as the left-sided ventricular extrasystoles, a patient with paroxysmal tachycardia between attacks.

Evidences of atrial fibrillation cannot be obtained with venous pulse, as the fibrillating auricle does not give any wave on it; and so the only evidences of this state can be revealed by the electrocardiogram. The studies of Cushny and Edmunds, of Hirschfelder, of Rothberger and Winterberg, and of Thomas Lewis indicate that this may open up an entirely new field in our knowledge of the permanent irregularities of the heart and of paroxysmal tachycardia, and in the study of many functional disturbances which are at present quite mysterious.

It seems probable, therefore, that this new method will enable us to penetrate one step further into the

Fig. 10.—Graphic records of the heart sounds from a normal individual. Upper line, timer in fifths of seconds; lower line, phonogram.

problems which cannot be solved by the older procedures, and will bring us closer to a perfect understanding of what goes on in the diseased heart.

It is also possible to obtain graphic records of the heart-sounds by means of Einthoven's galvanometer. This procedure has nothing to do with the electrocardiogram and there is no direct connection between the galvanometer and the patient's body. The galvanometer is merely connected in circuit with the secondary coil of a very delicate telephone, or rather a microphone, so that it takes the place of the telephone receiver.

A stethoscope is held on the patient's chest and the heart-sounds are led to the microphone through a rubber tube. The sound waves cause telephone currents which are transmitted to the galvanometer and cause the string to vibrate. The vibrations of the string are photographed and graphic records of the heart-sounds are thus obtained (Fig. 9).

Figure 10 shows such records of normal heart sounds. It will be noticed that vibrations of the first sound last only about 8/100 to 1/10 second. The short pause is about 15/100 to 25/10 and the second sound lasts 5/100 to 8/100; while there is a long pause in diastole.

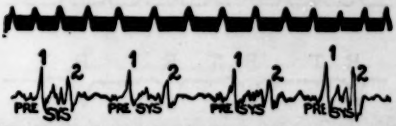

Fig. 11.—Graphic record of heart sounds from a patient with mitral stenosis and insufficiency. *Pre*, presystolic rumble; *Sys*, systolic murmur. Upper and lower lines as in Figure 10.

Figure 11 shows a record from a little girl with a presystolic rumble and a systolic murmur at the apex. The small vibrations correspond to the rumble just before the first sound, and the large vibrations correspond to the heart sounds.

1035 North Calvert Street—2243 Linden Avenue.

ABSTRACT OF DISCUSSION

DR. J. A. LICHTY, Pittsburg, Pa.: I should like some information regarding the lettering of these waves; have the letters used any significance? I should like to know more, too, regarding the A-wave in particular; the A-wave is always mentioned and looked for, and I should like to know if the

lettering of the A-wave is an arbitrary lettering, or if it possesses some special significance.

DR. JOHN H. MUSSER, Philadelphia: I should like to call attention to the importance of all these studies, not only the studies with the apparatus which has just been presented, but also the studies with the ordinary Jacquet instrument by which it is made possible to differentiate the various myogenic functions of the heart. This is very important in diagnosis and prognosis. It has also occurred to me that we can draw excellent conclusions as to methods of treatment. When we find in one man that there is an excess of stimulus production or of excitability, a depression of conductivity or contractility or a loss of tonicity, when coupled with certain blood-pressure changes, we have a guide at once for methods of treatment that is not based on empirical grounds, but is actually scientific. In the discussion on the question of heart failure and the reports of the various investigations concerning it, I had in mind to call attention to the value of morphin as a remedy in the earlier periods of heart failure, for two reasons. First, we realize, of course, that in the prevention of heart failure we should take into consideration the fact that there is a failure as well occurring in other portions of the organism, and particularly the nervous system. One of the first indications of heart failure perhaps is undue excitability or excess of stimulus production. Second, there is the immediate action of morphin on the heart. If we can uplift the condition of the nervous system, or reduce its wear and tear, both of which may be factors in the production of cardiac failure, by the use of a remedy such as morphin, we are going a long way in the prevention of cardiac exhaustion. I think therefore that morphin is a valuable aid directly and indirectly; directly by its action in lessening excitability or perhaps stimulus production; indirectly, through the nervous system. Other remedies or measures may be employed to control these disturbed myogenic functions. Furthermore, when we find that there is depression of conductivity, the remedy to be employed—atropin or belladonna—and other remedies come to our minds at once. For the depression of contractility the nitrites, among many other remedies, are necessary, and in loss of tonicity, digitalis and other heart tonics are of avail. In differentiating the remedies required, the degree of tension of the vessels is a valuable aid. I have been at sea recently and frequently in regard to the employment of remedies for the complicating conditions present in cardiac exhaustion. I have had great satisfaction resulting from studies such as these in determining the lines of treatment, and for this reason I wish to call attention to the importance of observations which help us in this matter.

DR. RICHARD WEIL, New York: I think it would be of interest to analyze the evidence offered by this new method with reference to the question of nodal rhythm. It seems impossible to determine definitely by the older sphygmographic method whether the coincidence of the jugular and the radial impulses was due to synchronous contractions of the auricle and ventricle—the nodal rhythm theory—or whether it was due simply to the propagation of the systolic ventricular impulse through the paralyzed auricle into the jugular. I should like to know whether the galvanometer method has in such cases determined the presence or absence of a true auricular contraction.

DR. A. D. HIRSCHFELDER, Baltomore: The A-wave is so called because the wave is caused by the auricular contraction. The letters P, Q, R, S and T of the electrocardiogram are purely arbitrary, but the P-wave is probably so named because it is a presystolic wave. I know of no significance of the lettering of the other waves, except possibly the letters of the alphabet following the P were used for the sake of convenience. P was selected first because it was the first letter of presystolic.

I agree with Dr. Musser that the most important thing for us at present is carefully and with accuracy to analyze the possible effects drugs are having or are producing, studying the maximal and the minimal blood-pressures, the venous pressures, the electrocardiograms, and also any changes in the cardiac outline. We should study the changes in force and the venous blood-pressure, the tendencies to overfilling of the heart, the changes in the tonus of the heart muscle (*i. e.*, the tendency of the heart to resist overfilling), and we should study as well the electrical changes which accompany changes in the cardiac impulses.

Many of the venous tracings, especially those having to do with the wave due to synchronous contraction of the auricle and ventricle, admit of doubtful interpretation. Some of the waves which appear during ventricular systole coincide with the C-wave and appear to be due to a fling of the lever. The electrocardiograms taken so far have not shown any evidences of nodal rhythm. Experiments with animals show simultaneous contractions of auricle and ventricle. On the frog's heart we can show contractions of the muscle ring that corresponds to the His bundle. The muscle ring can be seen contracting. When an abnormal stimulus acts first on this ring it contracts first and the auricular and ventricular contractions follow directly the contraction of the ring. The auricle and ventricle then contract simultaneously. However, this does not prove that a similar phenomenon occurs in all the cases which MacKenzie has ascribed to it in man. This whole subject is a matter for further careful investigation.

RACHITIS*

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CHICAGO

Rachitis is a dystrophy with which the pediatrician comes into contact with a frequency which breeds contempt; on the other hand there are a certain number of physicians to whom the condition of rachitis is sufficient explanation for any and all pathologic conditions. To what may be attributed this great variation of opinion among medical men? It is undoubtedly due to the fact that there is no definite limitation in the symptomatology of this condition. The definition of rachitis as set down in most of the text-books is the following:

Rachitis is a condition of malnutrition affecting all structures and systems of the body with characteristic defects of nutrition, chiefly manifested in the bones. It is this last phrase of the definition that has caused the many errors in the use of the name. Rachitis is a dystrophy, therefore a constitutional disorder, and though the chief macroscopic and known microscopic changes do affect the bones, there are other changes which are as constant as those of bone growth. With the name "rachitis" there is indelibly associated this so-called softening of the bones, and it follows that many are apt to rely on these changes only as the basis for diagnosis of the condition. It is because of this apparent diversity in the writings of pediatricians that this subject is brought to the attention of this Section, so that the use of the term may be confined to a certain definite symptom-complex.

ETIOLOGY

In no other pathologic condition are there so many theories as to the causative factors as in rachitis. While in the main there is a degree of uniformity, there are many theories of many authors which as yet are both unproved and not disproved. It is not within the province of this paper to go into the myriad of theories or into the various factors that seemingly favor the development of rachitis. Rachitis is a diet disease; to this statement most authors will subscribe. The dietetic errors which have received the greatest emphasis have been the arrangement of the percentages in the various constitu-

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

ents of the foods; to this I cannot subscribe. Admitting that it is possible to develop this condition in the lower animals when fed on various foods, the important point is that by feeding on such mixtures there is certain to be developed a disorder of digestion; and it is this factor which is the important etiologic element in this dystrophy. While it is a daily occurrence to see rachitic infants which have been fed on any of the mixtures that are emphasized as causes for rachitis, on the other hand it is a too common experience to find this dystrophy present in infants which are being given a breast-milk in which all our present-day knowledge in milk analysis can show no shortcoming; hence the constitutional idiosyncrasy of the baby is made to serve as the excuse. It is admitted that there are many contributing factors in these cases the importance of which have not been fully interpreted.

The various contributing causes embraced within the term "malnutrition" are no doubt of vast importance but the point which should be emphasized is that many cases show this or that contributing cause, yet in each and every case there is found an indigestion.

Rachitis is a dystrophy occurring usually between the sixth and thirtieth month, and in a few exceptional cases prior to this period. It is a condition for which the advice of the physician is not sought *per se*. These cases of persistent indigestion will, when occurring at an earlier period, develop the marantic type of dystrophy and in a large percentage of the cases terminate in the dystrophy known as infantile atrophy. There is still another age in which there is apt to occur a dystrophy with characteristic symptomatology, *i. e.*, chlorosis.

CLINICAL HISTORY

The usual clinical history of rachitis is that the child is restless and more or less fretful, the sleep is disturbed, the child shows a tendency to throw off the coverings, there is a slight rise of temperature, especially at night; with this there is the tendency to profuse perspiration about the head and face. When the child is picked up after a sleep it is noticed that the pillow is wet and the perspiration stands in beads on the forehead. Hand in hand with this there is a general tenderness; this tenderness may not manifest itself in the milder type of cases. The child repels advances, manifesting a desire to be let alone. If a careful inquiry is made, it is found that the child has had some disturbance of digestion. There is flatulence, frequently large foul-smelling bowel movements, with either diarrhea or constipation.

This indigestion is always present. The reason that more stress has not been laid on it is that the disorder is not a summer disorder but is met more frequently in the other seasons. The summer diarrheas frequently usher in an attack, but as these attacks of indigestion in the summer are of a more acute type the advice of a physician is sought early and the dietetic disorder is immediately remedied, while the low-grade digestive disturbances of the colder weather are allowed to go on untreated for an indefinite period.

This group of symptoms antedates any bone changes that are demonstrable clinically, but soon the beading of the ribs and the horizontal depression just below the nipple line may be noted; later on the wrists, knees, and ankles enlarge. The enlargements of the ends of the long bones follow certain definite rules and it is found that such bones as are active during their active growth show the greater deformity. The shape of the head is often characteristic. The bones become flattened and the general appearance is that the head is large but does not simulate the hydrocephalic head, in which there is bulging rather than flattening. The bony prominences are thickened. The head shows other characteristics—the veins on the forehead stand out prominently; the fontanel bulges and is unduly open; the frontal suture in cases occurring early is open.

Craniotabes is not a frequent accompaniment of rachitis but is found in enough cases to call for special mention. Craniotabes is that condition found in the posteroparietal region by which under moderate pressure of the fingers the bones cave inward with a feeling like that of stiff parchment. The question as to the significance of craniotabes is still a mooted point, and many still hold that it is rather associated with syphilis than with rachitis, but that it does occur in cases of simple rachitis there is little doubt. Craniotabes is quite frequently associated with laryngismus stridulus. The skull of a child affected with craniotabes shows shallow depressions at the diseased areas smoothly beveled off into the surrounding bone.

Changes occurring throughout the skeleton will be passed over, as they are too familiar to all to bear repetition.

Muscular Symptoms.—There is general muscular flabbiness and weakness. The patient may be fat and plump but the muscles feel lax and flabby. It is to this condition of the musculature that many of the deformities may be attributed, as kyphosis, scoliosis, knock-knee and talipes.

Nervous Symptoms.—Convulsions, tetany and laryngismus are more prone to occur in the rachitic. Tenderness, irritability, restless sleep, head rolling are common to the disorder and may be attributed to a nervous system rendered unduly irritable by the dystrophy.

Lymph-Glands.—These glands are usually palpable all over the body and in the prolonged and exaggerated cases the spleen is also enlarged.

Teeth.—Dentition may be delayed or irregular. The teeth are more apt to decay.

Blood.—The blood shows constant findings simulating chlorosis. This is especially true in the more severe types.

Complications.—In rachitis there is a tendency toward catarrhal disorders. All mucous membranes are prone to inflammation and many disorders of the upper respiratory tract, bronchitis and bronchopneumonia are encountered.

PATHOLOGY

In spite of innumerable opinions this question is still enveloped in a certain obscurity. The differences of opinion in regard to the causes of the disorder are reflected in a variety of opinions as to the manner in which they act. Identical conditions receive absolutely contradictory interpretations. Probably no organ or tissue of the body is exempt from changes due to this dystrophy, although the only changes which are demonstrable as caused by this condition are seen in the bones.

On examination of a long bone by making a longitudinal section of it and its adjacent cartilage, comparatively healthy bone is found on one side of the epiphysis, healthy cartilage on the other and between the two a layer, more or less thickened, of bluish translucent cartilage. The end of this bluish cartilage toward the healthy cartilage is regular, but the end toward the bone is very irregular—so much so in some cases that the cartilage appears within the bone as islands of cartilage. This

is the spongy tissue which has been considered by many as the characteristic lesion of rickets. The dimensions of the medullary are notably augmented. The modifications as revealed by histologic survey lie especially in the chondroid zone, which is manifestly thickened. At the juncture of this zone with the spongy bone there are numerous structures enveloped in a thin layer of embryonic tissue; the cartilaginous cells are proliferous; only their disposition in series is not regular and the intercellular substance which separates them is not distributed as in the normal bone. It is probable that concurrent disorders do affect the findings in many cases. For example, it is easy of demonstration that if a child passing through a mild attack of rachitis is subjected to an attack of one of the acute infectious disorders, there occurs an exacerbation in the enlargements at the ends of the long bones; so in cases coming to post-mortem from intercurrent diseases, it is not infrequent to find the specific bacteria of the acute disorder lodged in great numbers at points in proximity to the cartilage of the long bones. So it may be said that an intercurrent disorder may have special effect on bones which are undergoing rachitic changes.

The bones show a deficiency of inorganic material. In normal bone the greater portion consists of inorganic material, but in rachitis these proportions may be reversed. By reason of the changes mentioned the entire bone becomes light, spongy, and plastic, and greenstick fractures are prone to occur.

From the stimulation caused by the greater blood-supply, the enlargements at the ends of the long bones are most marked in the epiphyses subject to the greatest motion. From their constant motion in respiration the enlargements are first seen at the anterior ends of the ribs, the so-called rachitic rosary; these enlargements are greater at the fifth and sixth ribs by reason of greater range of movement. It is well to remember that these enlargements are always larger on the pleural side and may not be noticeable exterially. After the termination of the rachitis the normal bone development resumes and the newly formed bone becomes harder than the normal bone.

DIAGNOSIS

No disease of early life is so common as rachitis, nor is any disorder so frequently overlooked. It is far commoner for the diagnosis to be made after the cessation of the disorder when there remain but the results of a past rachitis than to have the diagnosis made during the attack.

Rachitis is a disorder insidious in its onset with a very definite symptom-complex described under "Clinical History." This clinical history occurs before any changes in the bones can be demonstrated clinically. There may be a persistence in any or all of these symptoms until the bone-changes appear; or any of them may subside. The chief object of this paper is to call attention to the misuse of the term "rachitis" as applied to the resultant deformities rather than to the disorder itself. The term "rachitis" should be applied only to the symptom-complex above described. The misuse of the term is now so general that in the use of the word it has become necessary to qualify it by a phrase indicating what phase of the disorder is under discussion. The term "acute rickets" is now of more or less general use but this is not applicable as the disease is an insidious disorder, running an indefinite course, and there is no definite disease which may be classified as chronic rickets. At just what point in the disorder it can be said that the rachitis has terminated and that there remains but the results of the rachitis may often be a debatable point, but it is obvious that in many cases of so-called rachitis the disorder has long since been overcome. That this point is well taken is evidenced by the fact that many of the history cards used by the various health authorities in the examination of the school child have this question: Has the child rickets?

It may be set down dogmatically that rachitis is a dystrophy, usually occurring between the sixth and thirtieth months, the symptoms of which are digestive disturbance, restlessness, profuse sweating, especially about the head and face, in severe cases general tenderness; and with these there occur manifold changes in the various systems of the body, with most marked macroscopic and known microscopic changes on the bones.

Of the mistakes in diagnosis most frequently made one is failure to recognize inflammatory and sanguinous effusions beneath the periosteum for simple rickets. This undoubtedly brought the term "acute rickets" into use. Another is mistaking the bone changes of congenital syphilis for those of rickets and a third considering the pseudoparalysis of rickets essential paralysis. Infantile scurvy may complicate rickets, and some authors have a classification including scurvy-rickets; but the disorders should never be confounded, as each has its distinct clinical picture.

PROGNOSIS

Children rarely die of rickets *per se*. It is usually some concomitant or intercurrent disorder that terminates life. Of these the pulmonopathies find in the rachitic child most favorable conditions, and, if survived leave the patient with permanently damaged chest and respiratory organs which may eventually terminate in an invasion of tuberculosis.

Patients with marked splenic enlargement and profound anemia may become marantic with a grave prognosis. Convulsions cause death in a large number of these cases. Laryngismus stridulus appears as a causative factor in many of the fatal cases but it is impossible to say to what extent the rachitis may be held responsible.

The active rachitic process usually ceases by the end of the second year, the length of the disorder depending largely on the ability to remove the indigestion and give an appropriate diet. In many cases the rachitis appears to develop with the advent of an improvement in diet and a clearing up of the digestive disturbance; this can easily be explained by the fact that at the beginning of the treatment of the digestive system the patient was in a condition of athrepsia and with the better hygiene the dystrophy took on a lower grade of malnutrition, namely rachitis. This form of the disorder is usually transient, lasting but a few weeks.

TREATMENT

From the above it is readily seen that rachitis is a preventable disease. The diet is of the first importance. In breast-fed children it becomes necessary to influence the mother in such manner as to make her milk suitable for the child. In many of the cases it becomes necessary to supplement the breast by suitable artificial foods. As the lack of fats has so long been emphasized as a causative factor there is danger of putting too much stress on this phase of the diet and of undoing good efforts by adding more fat than can be handled with

advantage by the child. Good hygiene with plenty of fresh air is a prerequisite. No diet can be set down that can be recommended in these cases. As a general rule cow's milk should be given, but as these cases occur in children fed on the starchy foods it must be remembered that the stomach will need much education in the digestion of this food and the initial use of milk must be in very attenuated doses. Expressed beef juice, raw eggs, orange and lemon juice all have a place in the dietary.

The use of drugs should be limited to the needs of the individual. Syrup of the iodid of iron is frequently indicated. For the digestive weakness the addition of malt or of molasses gives very favorable results. In clinical use the addition of a considerable amount of New Orleans molasses has the same effect as an extract of malt. The intercurrent disorders should be given appropriate treatment.

The tendency to deformities, such as bow-legs, knock-knee and spinal curvatures, must be borne in mind and precautionary steps be taken by preventing undue strain on these parts. In regard to remedying these deformities, it is well to remember that they are very common in childhood and rare in adult life. The tendency of Nature is toward repair.

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ETIOLOGY, DIAGNOSIS AND TREATMENT OF COLONIC, SIGMOIDAL, RECTAL AND ANAL AFFECTIONS IN INFANTS AND CHILDREN UNDER TWELVE YEARS OF AGE

INCLUDING REPORT OF THREE HUNDRED AND SIXTY-NINE CASES

WITH A DESCRIPTION OF A METHOD OF CECOSTOMY WHICH PROVIDES A MEANS OF IRRIGATING THE LARGE AND SMALL INTESTINE SEPARATELY OR AT THE SAME TIME *

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A fairly large experience in the treatment of colonic and anorectal affections has convinced me that the discomfort and pain from which infants and children suffer is to be found in these localities much more frequently than is suspected by the internist, pediatrist or surgeon. When an adult suffers from a colonic or rectal ailment he is usually advised to have it treated or operated on just as soon as its nature has been determined, but this rule is not always followed when an infant or child becomes so afflicted. In many instances pathologic conditions of the colon and rectum go unrecognized; in others they are considered of minor importance, and in still others, even when serious and after diagnosis, the physician not infrequently does nothing but advise the mother to let the child alone, telling her that it will outgrow the trouble.

Now and then a case of abdominal disease is encountered in which a diagnosis cannot be made, except by exclusion. Usually, however, the nature of the intestinal lesion can be determined by palpation, percussion, succussion, the *x*-ray, or by inflating or distending the colon with air, fluid or a bismuth solution, after first obtaining a complete history. There is no reason, however, why diseases of the rectum should not be accurately diagnosed by the physician who has perfected himself in modern methods of examination.

Most rectal ailments are located in the lower inch and a half of the rectum; consequently they can be identified by inspecting and palpating the anus and surrounding parts and by making a careful digital and anoscopic examination; but when the disease is in the middle and upper rectum, at the rectosigmoidal juncture or lower sigmoid flexure, it can be seen only through the proctoscope or sigmoidoscope.

In many quarters the opinion prevails that a digital and proctoscopic examination is impossible in very young children. Such, however, is not the case, since the sphincter can be made to relax and the rectum is sufficiently large to admit the finger or a small proctoscope.

I have treated many young people and adults for very extensive procidentia recti, invagination, mechanical constipation, colitis, stricture, abscess, fistula and other serious diseases of the lower bowel who had suffered since infancy or childhood, affections which could have been speedily cured had they been correctly diagnosed and treated in their incipiency. It would seem that the time has now arrived when physicians should take on themselves the responsibility of treating the anorectal affections of children as soon as diagnosed and no longer permit them to drift, as has been customary, with the hope that they will outgrow the lesion if it does not heal spontaneously.

The treatment in this class of cases does not necessarily mean an operation, for, in many instances, a cure can be effected by regulating the stools, keeping the bowel in a hygienic condition and by making topical applications. When surgical intervention is necessary it should cause no anxiety, because in the vast majority of instances the operation will be devoid of danger, can be quickly performed, postoperative suffering is slight and convalescence is short.

Instead of discussing at length the etiology, symptoms, diagnosis and treatment of the various colonic and anorectal diseases of infants and children twelve years of age or less, I have subdivided and tabulated my work in this field, which includes 368 cases, to show the large variety of affections encountered in these regions and the results which followed their treatment. Three tables with their summaries have been compiled; the first includes the cases of rectal diseases, the second those of anorectal obstipation and the third those of abdominal obstipation. After calling attention to the salient features of these tables and outlining the treatment of the various diseases, I shall describe my method of cecostomy which permits the small and large intestine to be irrigated separately or at the same time, a reliable procedure to employ in all cases where direct bowel treatment is indicated.

Remarks.—The age of these patients varied from birth to 12 years of age; the majority were more than 6 years old. None of the five deaths recorded is chargeable solely to the treatment instituted, because they occurred in infants afflicted with acute congenital bowel obstruction (2), cancer (2) and diphtheritic colitis (1), and the patients were moribund or in a deplorable condition when first seen.

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910

TREATMENT OF ANORECTAL AFFECTIONS

The majority of operations performed in this series of cases required less than ten minutes, and local anesthesia induced by sterile water, normal saline or a 0.125 per cent. eucain solution was employed more frequently than general narcosis, and the treatment of the different affections was in the main as outlined below.

Fissure in Ano.—Recent fissures were cured by securing daily semisolid movements and by cleansing and placing a small gauze pledget previously saturated in ichthyol or a silver nitrate solution in the rent for the purposes of drainage and stimulation. Palliative measures are of little avail in the treatment of old fissures accompanied by sphincteralgia because they do not put the muscle at rest. Divulsion of the muscle is sometimes effective, but I have discarded it in favor of division of the sphincter because the latter puts the sphincter at complete rest during the treatment and also serves to widen the anal canal and act as a prophylactic against future tears. My operation consists in anesthetizing the tissues posterior to the rent by injecting them with sterile water or a 0.125 per cent. eucain solution until white. The sphincter is then severed by scissors, one blade of which has been placed posterior to and the other in the rectum in front of the fissure, or with a bistoury.

Ulcers of the Anal Region.—Ulcers which incite sphincteric contraction are treated as fissures unless they are syphilitic, when anti-syphilitic remedies are added. Extensive ulcers in the middle and upper rectum are treated through the proctoscope with stimulating applications, the cautery or caustic. When they are numerous, superficial and scattered throughout the rectum, irrigation daily with a mild solution of ichthyol 1 per cent., permanganate of potash 1 per cent., or weak solutions of boric acid or silver nitrate. Carlsbad salts or krameria and soda work well, but when the ulcerated areas are chronic and deep, as indicated by frequent evacuations containing a large amount of pus, blood, mucus and other débris, stronger solutions are employed until there is improvement, and in addition a warm emulsion composed of olive oil, bismuth and iodoform is injected in small amounts at night for the purpose of allaying tenesmus and pain. In aggravated cases in which the colon and sigmoid are involved, and the above measures fail, appendicostomy or cecostimy is performed.

Procidentia Recti.—Where the mucous membrane only protrudes, a cure can sometimes be effected by (a) correcting a cough, diarrhea, constipation or other cause of straining; (b) securing semisolid movements; (c) having the child stool while in the recumbent posture; (d) injecting an alum, zinc or other astringent solution after each action, and (e) placing a pad of gauze over the anus and tightly strapping the buttocks.

When this treatment fails, I infiltrate the mucosa with water or a eucain solution at a number of points until glassy white welts are formed; these in turn are seized, pulled down, ligated and left to slough off as in hemorrhoidal operations. The procedure is nearly always successful because a sufficient exudate is thrown out to glue the mucous and muscular coats together, and shortening and narrowing of the rectum ensues as healing of the ulcerated areas takes place.

Where both the mucosa and muscularis protrude, I (a) remove a cuff of the mucous membrane, (b) fold and suture the muscular tunic on itself and (c) complete the operation by suturing the divided edges of the mucosa. In very extensive cases of procidentia complicated by invagination of the sigmoid flexure into the rectum, I proceed as follows: (a) the abdomen is opened, the bowel pulled up until taut and then anchored to the anterior parietes by my method of sigmoidopexy; (b) linear cauterization is made to the middle and upper rectum through the proctoscope, and finally (c) a diamond-shaped piece of tissue, including a part of the lower rectum, the sphincter and the postanal tissues, is removed to narrow the bowel, shorten the muscle and tighten the external parts about the rectum.

Polyps.—These, when located at or near the anus, are ligated and excised after having been anesthetized at their attachment. When situated higher up, where the mucosa is less sensitive, each in turn is exposed by the aid of the proctoscope, a Gant valve clamp is snapped on their pedicle and they are left to slough off. This method of removing polyps is admirable because it takes but a moment, is certain, causes no pain or bleeding and does not require ether. The older procedure of removing them by torsion is to be condemned because it is painful, extensively lacerates the mucosa and is frequently followed by copious bleeding and a lengthy convalescence.

In cases of long standing in which the growths are numerous, large, ulcerated and scattered throughout the colon or sigmoid flexure, nothing short of cecostomy and lavage or extirpation of the diseased bowel effects a cure.

Internal Hemorrhoids.—As will be seen by a glance at Table 1, internal hemorrhoids occur in infants and children almost as rarely as cancer. These tumors are painlessly removed in a moment by ligation after having been infiltrated with water or eucain.

Thrombotic Piles.—These are transfixed at their base with a curved bistoury, split open and packed with gauze, which arrests bleeding and acts as a drain to prevent their refilling.

Cutaneous Hemorrhoids.—These are snipped off with scissors and the wound is allowed to heal by granulation.

Stricture.—In cases in which the lumen of the intestine is diminished through swelling of the mucosa or exudates in and outside the rectal wall, the discomfort arising therefrom is lessened or completely overcome by regulating the stools, irrigating the bowel, making soothing and stimulating topical applications to the diseased intestine and by dilating the constricted bowel with the fingers or bougies.

Moderate cicatricial strictures are improved by divulsion gradually with bougies or forcibly with the fingers, but their division is preferable because more lasting results are obtained and the operation takes no longer. The technic consists in guiding a probe-pointed bistoury through the stricture and severing it and the sphincter posteriorly as it is withdrawn, and in packing the wound with gauze. Both divulsion and division are contraindicated when the stenosis is located above the peritoneal attachment, because peritonitis will surely follow rupture or perforation of the intestine.

There is but one cure for a scar stricture and that is complete extirpation, a procedure which entails some danger. Where there are multiple constrictions or a very long stricture and much perirectal thickening, extirpation will take considerable time, cause much shock and would likely prove fatal in young children, and for these reasons it is advisable to substitute colostomy for excision until the child has grown older and stronger, when the artificial anus may be closed and the stricture removed.

Congenital Deformities.—The treatment of imperforations of the rectum and anus in the newly born is varied according to the deformity. When the outlet is partially or completely blocked by a fold of skin or fibrous tissue, it is caught in forceps and removed with scissors; but when the anus is abnormally narrowed by connective tissue, it is split and the wound is drained and occasionally stretched as healing takes place. In cases of deformity in which the feces find a free exit through the vagina, bladder, buttock or elsewhere, operation is postponed until the child is older, but when the opening is small and there is danger from obstruction, it is enlarged or a temporary vent is formed in the interischial or inguinal region.

Imperforate Anus: If the cul-de-sac terminates low down and the sphincter is intact, the anus is formed at the usual location, but if the muscle is absent the anus is made further forward or backward according to indications. The operation is begun by an incision extending from the perineum in front to the coccyx behind, which splits the sphincter. The wound is deepened upward to the blind rectum, which, after being freed, is brought down and sutured to the anal skin, after which the sphincter and wound are sutured about it. The coccyx is removed when additional room is necessary, but the peritoneal cavity is not opened except when imperative, and is then closed before the bowel is anchored. When the intestine cannot be brought down to the perineum, it is sutured to the skin of the sacral or coccygeal regions. In all cases a fair-

sized rubber tube is left projecting from the rectum through which the meconium, gas and feces escape.

Imperforate Rectum: The anus may be normal and an obstruction may not be suspected until dangerous symptoms arise. In such cases, when the terminal extremity of the intestines is near the surface, it is incised, evacuated and washed out, but when the condition of the patient permits, the rectum is brought down and sutured to the anal region.

In distressing cases in which a part of the rectum is obliterated, it is freed and anchored at the most available point or a permanent artificial anus is established. When colostomy is performed, according to my intermuscular plan, the patient has fair control over the evacuations and often requires a laxative.

Sequelæ.—Sequelæ frequently need treatment to overcome constipation and prevent obstruction. Usually the trouble is caused by the small size of the original opening or a long narrow stricture which has formed where the intestine has retracted. In both conditions the lumen of the bowel is increased by incising and subsequently dilating it, or in cases where no previous attempt has been made to bring the cul-de-sac to the anus this is done if feasible. When neither of these procedures is possible a permanent artificial anus is formed.

Fistulas.—Fortunately in children fistulas are superficial, short, and of the complete variety and require but a slight operation under local anesthesia. The following are the steps in my operation for complete fistula: (a) enough of a 0.125 per cent. eucain solution is injected into the sphincter and tissues overlying the tract to form a white line, which indicates desensitization; (b) the lower blade of a Gant probe-pointed scissors is then introduced into the outer opening and made to travel along the sinus, which, together with the sphincter, is rapidly divided by a succession of cuts, and (c), after which the wound is packed with gauze.

Abscesses.—Irrespective of their extent and location, abscesses are freely incised, curetted, cleansed and drained to relieve pain and prevent burrowing of the pus.

Pruritus Ani.—This is more frequent in children than is suspected, and may be induced by local lesions which incite a discharge, worms and foreign substances which get caught in the anal, mucous or skin folds. When due to the former the condition causing the discharge is corrected, and when to the latter, frequent cleansing of the anus with plain or salt water will afford the necessary relief. In cases in which itching has existed for a considerable time and there is a chronic dermatitis, this is remedied by applying iodin or a nitrate of mercury ointment.

Impactions.—All these are treated alike, whether composed of feces, seeds or fruit-stones, but little or nothing is accomplished toward their dislodgment or expulsion by means of oils or cathartics internally administered. Recent fecal impactions are occasionally softened and evacuated by repeated enemas of warm water, oil or glycerin alone or in combination, but these measures have no effect on mucus-covered masses. Hydrogen peroxid in full strength when injected in liberal amounts has a decided tendency toward the breaking up of the fecal concretion into numerous smaller masses so that it can be washed out. Marked impactions, which cannot be dislodged by friction, massage and enemas, are removed by force. When low they are broken up or penetrated by the finger or handle of a spoon, but when high up in the rectum or sigmoid this is accomplished through the proctoscope with a gouge, after which the impactions are quickly evacuated by irrigation. Fecoliths which become encysted and cannot be dislodged by treatment instituted from below or by way of the mouth, are removed by enterotomy or an outlet is made above them.

Venereal Warts.—These are removed with scissors without anesthesia, or they are dried up with a mixture of equal parts of calomel and tannic acid.

Hypertrophied Anal Papillæ.—When causing pruritus and tenesmus they are snipped off under infiltration anesthesia.

Hypertrophy of the Anal Sphincter.—This condition, if inducing sphincteralgia and constipation, is quickly and successfully treated by dividing the muscle exactly as in fissure operations, and painful defecation resulting from an abnormally small anus is treated in a similar manner.

Hypertrophied Rectal Valves.—The valves are divided by placing Gant's valve clamps on them and allowing them to slough out.

Fecal Incontinence.—This condition following injuries or operations is improved either by narrowing the anus through cauterization and the production of scar tissue or by isolating and approximating the ends of the divided muscle.

TABLE 1.—ANORECTAL AFFECTIONS IN INFANTS AND CHILDREN

Diseases and Complications.	No. of Cases.	Sex — M.	Sex — F.	Cured.	Improved.	Unimproved.	Died.
Congenital deformities	10	6	4	8	..	..	2
Sequelæ following operations for deformities	9	5	4	3	5	1	..
Coccyx, tumors and cysts of	3	2	1	2	1	..	..
Coccyx, deviation of (anterior and posterior)	2	1	1	2	..	..	..
Coccyx, fracture of	2	2	..	2	..	..	..
Coccygodynia	1	..	1	1	..	..	..
Coccyx, congenital absence of	2	2	..	2	..	..	..
Dermoid, sacral	2	1	1	2	..	..	..
Cyst (sebaceous), anal	1	1	..	1	..	..	..
Lipoma of buttocks	2	1	1	2	..	..	..
Sarcoma of anus and buttocks	1	..	1	..	..	..	1
Carcinoma, rectal	1	1	..	..	..	..	1
Procidentia (mucosa only)	27	15	12	20	5	2	..
Procidentia (mucous and muscular coats)	7	3	4	6	1	..	..
Polyps (single)	15	6	9	15	..	..	..
Polyps (multiple)	6	4	2	4	1	1	..
Fissure (single 16, double 1)	17	8	9	17	..	..	..
Ulcers, non-specific (single 2, multiple 6)	8	4	4	8	..	..	..
Ulcers, syphilitic (congenital, of anus or vulva)	6	2	4	5	1	..	..
Ulcer, tuberculous	1	1	..	1	..	..	..
Ulcer, diphtheritic	1	..	1	..	..	..	1
Stricture (congenital syph. 1, foreign body 1, injury 1)	3	2	1	2	1	..	..
Chancroids, anal	1	..	1	1	..	..	..
Venereal warts (acuminata 1; lata, syph., 1)	2	..	..	2	2	..	..
Gonorrhea	5	2	3	5	..	..	..
Proctitis, acute	6	4	2	6	..	..	..
Proctitis, chronic	9	5	4	7	1	1	..
Erosions of anus and skin	7	3	4	7	..	..	..
Abscesses (ischiorectal 4, marginal 4, submucous 3)	11	7	4	10	1	..	..
Abscess, sacral (dermoid)	1	1	..	1	..	..	..
Fistula (complete 4, blind internal 3, blind external 1)	8	5	3	8	..	..	..
Fistula, rectovaginal	1	..	1	1	..	..	..
Fistula, tuberculous (local 1, with gen. tb. 1)	2	1	1	1	..	1	..
Hemorrhoids, external thrombotic	8	4	4	8	..	..	..
Hemorrhoids, external cutaneous	5	3	3	5	..	..	..
Hemorrhoids, internal (complicating constipation)	2	1	1	2	..	..	..
Impaction, fecal (rectal)	15	8	7	15	..	..	..
Impaction, from seeds and fruit-stones	5	4	1	5	..	..	..
Injuries (severe laceration of rectum and anus)	4	3	1	3	1	..	..
Foreign bodies (fish hooks, bones, coins, etc.)	4	4	..	4	..	..	..
Pruritus ani	3	1	2	2	1	..	..
Threadworms	3	2	1	3	..	..	..
Roundworms	2	1	1	2	..	..	..
Hypertrophied anal papillæ	1	1	..	1	..	..	..
Patulous anus (from pederasty)	1	1	..	..	1	..	..
Sphincters, anal and urinary (paralysis of)	3	2	1	..	1	2	..
Sphincter, hypertrophy of	11	6	5	11	..	..	..
Defecation, painful, from abnormally small anus	7	4	3	7	..	..	..
Defecation, difficult, from overlapping anal skin folds	3	2	1	2	1	..	..
Fecal incontinence (following operation)	2	1	1	..	1	1	..
Hypertrophy of the rectal valves	2	1	1	1	1	..	..
Rectocele, posterior	1	1	..	..	1	..	..
Bifurcated rectum	1	1	..	..	1	..	..
Total (53 affections)	263	146	117	223	28	9	5

SUMMARY OF TABLE 1

Different diseases treated	53
Number of patients treated	263
Males	146
Females	117
Number of patients cured	223
Number of patients improved	28
Number of patients unimproved	9
Number of deaths	5
Total	263
Number of venereal diseases treated	14
Congenital syphilis (M. 2, F. 4)	6
Chancroids (M. 0, F. 1)	1
Venereal warts (M. 0, F. 2)	2
Gonorrhea (M. 2, F. 3)	5
Total	14

TABLE 2.—ANORECTAL MECHANICAL CONSTIPATION (OBSTIPATION) IN INFANTS AND CHILDREN TWELVE YEARS OF AGE OR YOUNGER

Diseases and Complications.	No. of Cases.	Sex M.	Sex F.	Cured.	Improved.	Unimproved.	Died.
Fissure in ano	10	6	4	10	..	..	..
Ulceration, non-specific	4	2	2	3	1	..	..
Ulceration, congenital syphilitic	2	..	2	1	1	..	..
Stricture, congenital syphilitic	1	1	..	..	1	..	..
Stricture, traumatic (encysted chicken-bone)	1	1	..	1	..	..	..
Stricture from sloughing (extravasation of urine)	1	1	..	..	1	..	..
Congenital deformities (complete and incomplete occlusion)	10	6	4	8	..	..	2
Congenital deformities, operations following (sequelæ)	7	4	3	4	2	1	..
Coccyx, anterior deviation of	1	1	..	1	..	..	..
Coccyx, congenital absence of with anal opening at sacral termination	1	1	..	..	..	1	..
Coccyx, congenital absence of, causing posterior rectocele	1	..	1	..	1	..	..
Bifurcated rectum	1	1	..	..	1	..	..
Impaction from seeds and fruit-stones	5	4	1	5	..	..	..
Ascarides lumbricoides, impaction from	1	..	1	1	..	..	..
Foreign bodies	4	4	..	4	..	..	..
Polypi	4	3	1	3	1	..	..
Hypertrophy of anal papillæ	1	1	..	1	..	..	..
Hypertrophy of sphincter	11	6	5	11	..	..	..
Hypertrophy of rectal valves	2	1	1	1	1	..	..
Sarcoma	1	..	1	..	..	..	1
Carcinoma	1	1	..	..	..	..	1
Total (21 affections)	70	43	27	54	10	2	4

TABLE 3.—ABDOMINAL MECHANICAL CONSTIPATION (OBSTIPATION) UNDER TWELVE YEARS OF AGE

Diseases and Complications.	No. of Cases.	Sex M.	Sex F.	Cured.	Improved.	Unimproved.	Died.
Hirschsprung's disease	3	1	2	..	2	1	..
Dilatation of colon	8	5	3	..	5	3	..
Colonic ptosis	4	2	2	..	2	2	..
Invagination of sigmoid flexure into rectum	7	3	4	5	1	1	..
Adhesions following typhoid	2	1	1	1	1	..	..
Adhesions following localized peritonitis	1	..	1	1	..	..	..
Adhesions following appendectomy	1	1	..	..	1	..	..
Angulation sigmoid flexure (congenital)	1	1	..	1	..	..	..
Angulation hepatic flexure (cord binding to abdominal wall)	1	1	..	..	1	..	..
Volvulus, partial (chronic)	3	1	2	2	..	1	..
Enterospasm, chronic intermittent (foreign body in sigmoid)	1	1	..	1	..	..	..
Mesentery, abnormally long (twisting and adhesions)	1	1	..	..	1	..	..
Mesentery, abnormally short (angulation)	1	..	1	1	..	..	..
Hypertrophy of O'Beirne's sphincter	2	1	1	..	2	..	..
Total (14 affections)	36	19	17	12	16	8	0

COMBINED STATISTICS OF TABLES 2 AND 3

Anorectal mechanical constipation (obstipation)	70	43	27	54	10	2	4
Abdominal mechanical constipation (obstipation)	36	19	17	12	16	8	0
Total (35 affections)	106	62	44	66	26	10	4

My case of posterior proctocele was relieved by removing a section of the bowel and suturing the edges of the wound, and the bifurcated rectum was treated in the same way.

Foreign Bodies.—Small, smooth and sharp-pointed objects are removed with the finger or through the proctoscope with forceps, but when large or encysted, much annoyance is saved by splitting the sphincter muscle under eucanization so that they can be quickly removed without pain.

Diseases, Injuries and Deformities of the Coccyx.—When the coccyx is displaced, fractured or inflamed and causes discomfort or painful defecation, its removal is indicated. The steps in my method of coccygeal excision consist in the following: (a) the tissues are folded between the thumb and fingers and divided transversely and down to the tip of the coccyx with one cut of the scissors; (b) a Gant coccygeal elevator is hooked in the bone and it is lifted upward, freed and removed by four cuts made at the sides, beneath and transversely through the base of the coccyx; and (c) finally the wound is closed with interrupted sutures. This procedure is superior to the older excision operation because it requires but three minutes, is practically bloodless, primary union is obtained and the only paraphernalia required are strong, blunt-pointed scissors, a needle and a piece of catgut. The success of the operation is due to the fact that the cuts are made without injury to the blood vessels, since the scissors point upward, outward and away from the rectal vessels at all times.

Sacrococcygeal Cysts and Tumors.—These require skilful handling, and routine treatment is impossible because of their variable size, composition, method of attachment and the fact that they may contain fluid, sebaceous matter, hair, or supernumerary limbs. They have been treated with phenol and iodin injections, and with the cautery, but without success. Tapping and their partial removal has given temporary relief, but when feasible the tumor or cyst is carefully dissected out and the wound drained and closed.

Sacral Dermoids.—Indicated by a dimple or moisture over the bone, sacral dermoids are operated on by infiltrating their overlying tissues with eucain or water, removing the sac and draining the wound.

Malignant Growths (Sarcoma and Carcinoma).—Malignant growths require a difficult and prolonged operation and in children recur quickly after extirpation; for these reasons the little patients should be made comfortable by palliative measures and not be subjected to operation except in very favorable cases.

From what has been said it may be correctly inferred that rectal diseases, with the exception of cancer and congenital deformities of the bowel, are readily curable, and further, that the treatment required is simple, devoid of danger, leaves few sequelæ and causes little suffering. If such good results are so easily obtained, has not the time arrived when the family physician and pediatrist should prepare for and treat this class of affections in a more satisfactory manner than has heretofore been done? Should they do this, I believe that much unnecessary discomfort and pain could be saved to infants and children and that many of the serious bowel affections now encountered in adults could be prevented.

COMMENTS ON TABLES TWO AND THREE (OBSTIPATION)

I wish now to direct attention to some statistics relating to mechanical constipation, a condition which is often congenital, or acquired early in life, owing to the anatomic arrangement of the bowel in infancy and early childhood (Tables 2 and 3). In Table 2 are tabulated the cases of anorectal, and in Table 3 those of abdominal obstipation.

In studying these statistics of 106 cases of obstipation, it is interesting to note the large number (35) and widely varying conditions which have entered into its causation.

In nearly all the cases of anorectal obstipation the patients were cured or very greatly benefited; in only two instances was there no improvement, and only four deaths occurred in the seventy cases. The results obtained are no better than one would expect because of the simple nature of the rectal ailments causing the trouble and their easy curability. Of the four deaths, two were due to cancer and the others to acute obstruction from congenital deformities, and all four patients were beyond saving when seen.

Fourteen different lesions were found to account for the thirty-six cases of abdominal obstipation and the results in this series show that twelve patients were cured, sixteen improved and eight not benefited. The results obtained were very good, but not so flattering as those following the treatment of rectal obstipation, but this is not to be wondered at, because the lesions were more serious and laparotomy was necessary.

About one-half of the constipated infants and children examined suffered from mechanical obstructions of one kind or another. This appears to be a startling statement to make, since habitual constipation is usually thought to be the most common type of costiveness, but it must be remembered that my work is largely surgical and for a number of years I have taken a great interest in the treatment of surgical constipation and have written much on this topic. This would naturally lead to my getting a considerable number of these cases, whereas the internist would get the atonic type. My experience, however, warrants the belief that the cause of constipation is of a mechanical nature very much more frequently than physicians and surgeons at present recognize, and occurs in about 25 per cent. of the cases.

TREATMENT OF MECHANICAL CONSTIPATION (OBSTIPATION)

The therapeutic measures, medical and physical, employed to relieve and cure ordinary or atonic constipation are, as a rule, unreliable in obstipation, because here we have a surgical disease, and nothing short of an operation will permanently correct or remove the impediment to the fecal current.

I have elsewhere[1] fully described the surgical procedures indicated in the treatment of the various forms of mechanical constipation and need not do more here than to state how the operations are performed without giving their steps.

Dilatation of the Colon and Hirschsprung's Disease.—These are corrected in the very young by scarifying and plicating the colon and sigmoid flexure longitudinally to narrow the bowel, after which it is sutured to the anterior abdominal wall at one or more points to overcome ptosis; but when there are other complications, or the bowel is paralytic, I make it a practice to sever the ileum near the cecum, close the divided ends and anastomose the proximal extremity with the sigmoid flexure or rectum (ileosigmoidostomy, ileorectostomy). In older children, who can withstand a capital operation, in whom the intestine is enormous in size, its walls thin and the propulsive power destroyed, the ileum is joined to the sigmoid flexure or the colon is resected or excised.

Colonic Ptosis and Invagination of the Sigmoid Flexure.—These conditions are easily corrected in most instances without danger by scarifying the abnormal portion of bowel, lifting it upward and anchoring it to the anterior parietes at as many places as required by suspensory sutures tied across rubber tubings.

Adhesions.—These are dealt with according to their character. When a segment of intestine is glued to another piece of intestine or organ by exudates, separation is accomplished by wiping the intestine loose with gauze. When it is attached by fibrous bands, they are divided with scissors, but when the adhesions are extensive the bowel is carefully freed by dissection while in view, after which raw surfaces are covered with peritoneum.

Angulations and Twists (Volvulus).—Angulations and twists of the colon are straightened out by dividing adhesions, the abnormal mesentery or other structure which pulls on the bowel, or when induced by a misplaced organ or tumor, the former is replaced and the latter is removed.

Enterospasm.—When caused by impacted seeds, fruit-stones or a foreign body, enterospasm is often relieved by catharsis, belladonna, hot fomentations and enemas, but when these measures fail the offending object is removed through an opening made in the intestine.

Narrowing of the Bowel.—Narrowing, resulting from a hypertrophied O'Beirne's sphincter or stricture, is sometimes relieved by dieting, irrigation and medication, when the cause is inflammatory or ulcerative, but when the obstruction is due to cicatrization, divulsion or excision of the stricture is practiced.

DIRECT BOWEL TREATMENT WITH DESCRIPTION OF A NEW ENTERO-COLONIC IRRIGATION

Up to the present physicians know that better results are obtained in the treatment of inflammatory, ulcerative, parasitic and other bowel affections when medication is carried directly to the lesions than when it is made to reach them indirectly, as when given by mouth.

Enteroclysis and irrigation may be accomplished from below through the anus or from above through an opening made in the intestine, and however done it will prove successful provided all the lesions are reached. Treatment from below would be ideal if this could be satisfactorily accomplished, because the patient could remain at home and not be subjected to operation. But unfortunately it cannot be so done, because of the difficulty frequently encountered in passing the tube sufficiently high to carry the fluid to all parts of the diseased intestine.

Appendicostomy, cecostomy and my operation, which provides a way of irrigating both the small and large intestine, were originated with the object of procuring a means of through and through irrigation.

Appendicostomy, once so popular, is fast falling into disrepute, because the appendix is frequently bound down by adhesions, blocked, strictured, too short, or diseased, which makes it unfit for irrigating purposes; it sloughs off, or its opening closes. When appendicostomy is practiced, the appendix should be opened and a Gant appendiceal irrigator introduced during the operation so that irrigation can be started immediately.

Ordinary cecostomy may be employed when the disease is limited to the colon, but is not effective when the small intestine is involved.

I believe that the method of cecostomy with a provision for small and large bowel irrigation as described below is superior to other operations devised for the purpose of carrying the treatment directly to the bowel, because it is applicable in the treatment of lesions located in the small intestine, the large bowel or both. The operation is simple, devoid of danger, requires but a few minutes, and provides a certain means by which the physician, intern or nurse can irrigate all parts of the bowel immediately or later according to indications. Concisely described, the steps in Gant's cecostomy are as follows:

1. Through an incision made over it the cecum is brought into the wound and three purse-string sutures are introduced

1. Gant: Constipation and Abdominal Obstruction, 1909.

into its outer surface opposite the ileocecal valve and the intestine opened within the suture line.

2. The Gant metal, or preferably rubber, enterocolonic irrigator, is now pushed across the cecum and guided through the ileocecal valve into the small intestine by means of the thumb and fingers of the left hand and is held there by an assistant until the infolding purse-string sutures are tied and a circular cone-shaped valve is formed around the tube.

3. The cecum is scarified and two suspensory sutures are introduced at the sides of the irrigator and then carried through the abdominal wall by means of a long-handled needle, where they are tied across rubber tubings.

4. After the wound has been closed by the layer method the metal irrigator is retained in position by attached pieces of tape which encircle the body, but when the rubber tube is used it is fastened in the same way, or to the skin by an adhesive strip after the irrigating tubes have been closed with cravat clamps.

5. The dressings, including an outer covering of rubber tissue, are now applied after having been split to allow the irrigator to project through them.

COMMENTS ON AND INDICATIONS FOR GANT'S CECOSTOMY

I have employed this operation since January, 1906, and published it with indications Aug. 15, 1908,[2] but since then slight improvements have been made in the technic.

I have performed the operation twenty-two times on adults in the direct treatment of inflammatory, ulcerative, parasitic, specific and other affections involving all parts of the intestine, and the results following this procedure have been most flattering.

It has been performed but three times on children under 12 years of age. In all instances good results were obtained, and from this experience with the operation I am convinced that it has a wide field of usefulness in the treatment of intestinal affections in infants, children and adults, and that it should take precedence over enterostomy, colostomy, appendicostomy and ordinary cecostomy in this class of cases.

In a paper read before the Medical Association of Greater New York, April 20, 1908, and since, I have maintained that cecostomy is indicated in the treatment of enteritis, enterocolitis and catarrhal, tuberculous, dysenteric, syphilitic and gonorrheal colitis, ptomain poisoning, intussusception, paralytic ileus, peritonitis, cholera, typhoid fever, intestinal parasites, the manifestations of intestinal autointoxication, ordinary and pernicious anemia, intestinal feeding, malnutrition; following operations on the mouth, throat or stomach, and in gastric stricture, ulcer, cancer or other disturbances where rest of the organ is desirable. I also called attention to the fact that by means of cecostomy various intestinal diseases could be investigated, and that the procedure could be used to determine the amount and nature of the intestinal juices and discharges, the character of the feces, the direct action of salines and other cathartics when injected directly into the small and large bowel, the marked, immediate vasomotor effect following hot and cold enteroclysis, to diagnose angulation, twisting, ptosis or dilatation of the intestine by *x*-raying the bowel after it has been coated with bismuth solution injected for the purpose, and for the study of many other interesting problems.

150 East Thirty-Fifth Street.

2. Gant: Local and Surgical Treatment of Chronic Diarrhea, with Description of a New Operation for Irrigating the Large and Small Intestine, New York Med. Jour., Aug. 15, 1908.

ABSTRACT OF DISCUSSION

DR. LOUIS J. HIRSCHMAN, Detroit: I believe with Dr. Gant that most of us have been a little more remiss in investigating rectal diseases in children than we have been in adults. It is surprising to find in how many of the little patients brought to us the examination of the rectum has been neglected by the physician. These children are brought to the rectal specialist as a last resort, but it is seldom that even ocular inspection has been employed by the attending physician. By means of the proctoscope we can make an ocular examination very readily, and we can make an examination of the rectum in an infant of one year through a female cystoscope. Digital examination will give a practical understanding of the condition in the whole abdominal cavity. One can even examine the condition of the appendix, the colon and sometimes the gall-bladder can be reached with the finger. I do not know that I agree with Dr. Gant about leaving a "buttonhole" in young children. A child has less resistance, and we must be more careful how we employ major surgery. But I believe that many patients with intestinal disturbance, who have not responded to drug treatment, have responded to colonic irrigations with simple saline solution when everything else has failed. Often a crying child that is not helped by any treatment will be found to be suffering from anal fissure. Again, often following infectious diseases, acute hemorrhoids may develop. In cases of apparent prolapse, it is well to be certain that there is not an invagination. Recently I saw a child who had a complete extrusion of the entire colon in whom a diagnosis had been made of prolapse of the rectum. The child had gone down from 18 to 12 pounds in weight in six weeks. I think children are just as often subject to disease of the lower part of the abdomen as are adults.

DR. C. F. WAHRER, Fort Madison, Ia.: I have seen men introduce colon tubes all the way up to four feet in length, presumably past the ileocecal valve; in some cases, however, the end returned and even protruded from the rectum; large quantities of solution were therefore thrown into the rectum. Does Dr. Gant consider insertion of a high rectal tube a possibility or an impossibility? In most instances, I think, it is a mere dream.

DR. G. S. HANES, Louisville, Ky.: A frequent affection of the child is constipation, and the chief cause for constipation in children, and one which is easily overlooked, is intestinal obstruction. This means irritation of the outlet of the bowel —that is, of the sphincter muscle. There are ten cases of constipation due to irritation around the anal canal to one due to all other causes combined. The next trouble we most frequently find is diarrhea. The diarrheas that occur in childhood are usually due to fermentation of food, a catarrhal condition or ulceration. Constipation and diarrhea, of course, are symptoms of other conditions. When a child has eaten food that has fermented and produced irritation, as soon as the canal is cleared out the diarrhea will disappear. But when it is due to ulceration, or to a catarrhal condition, we must be more careful in treatment. Not long ago, a child of 4 years was brought to me with persistent diarrhea that had lasted for 14 months. I found that it was a case of amebic dysentery. The rectum was dotted thickly with small ulcers. I introduced the proctoscope and curetted one of the ulcers and examined it under the microscope and found it seething with amebas. In the last two years I have treated more than fifty cases of amebic dysentery, most of which have come from Kentucky. Of this number, six patients were children under 10 or 12 years of age. All physicians know how difficult it is to cure a case of amebic dysentery in any patient. In fact, we do not know whether they are cured or not. I told the family physician what to do, and if the child was not cured it was greatly relieved. I have never found appendicostomy at all difficult. To do an ordinary appendicostomy, when there is diarrhea or constipation, or other condition that prevails in the lining of the intestine, there need be no difficulty in introducing the instrument through the appendix. One can pick up the appendix and determine whether or not it is patulous. The best treatment of amebic

dysentery is ordinary coal oil. I have put in as much as half a gallon and allowed it to remain as long as possible. It is a sedative and does not set up peristalsis, and the patients can retain twice as much oil as they would water. I have had patients return after 24 hours and state that they were still passing coal oil. In the diarrhea, as a rule, the diseased condition is usually in the lower bowel and it can be treated through the anus.

DR. E. H. THRAILKILL, Kansas City, Mo.: Some time ago, in a paper before the Missouri State Medical Association, I said that the obstetrician before handing the child over to the nurse should examine the anus. I have seen children with stricture of the anus which would be relieved by just a little treatment by dilatation and there would be no further trouble. I have seen a number of cases of constipation due to fissure around the anus. With a very small dilator one can cure this, but the little child will have for some time fecal matter remaining there and irritating the bowel and he will not have a movement. Intussusception occurs because the colon and sigmoid are rather long in infancy, and this part of the bowel grows slowly during the first few years and is down low in the iliac region, and thus the invagination of the sigmoid into the rectum takes place. I recently saw such a case in which the child had a prolapse or invagination of the third degree. If these little children are put into the knee-chest position the bowel will often drop back and the little sufferer will be relieved. As to cases of pericolitis due to extra-colonic conditions, I think that is true of the majority of cases of constipation.

DR. S. G. GANT, New York: All proctologists agree that it is extremely difficult to introduce the proctoscope and sigmoidoscope because of the curves of the rectum and the angulations of the sigmoid. Pressure should never be exerted in their introduction. I know of three deaths from intestinal rupture and peritonitis caused by forcible attempts to push long, unyielding tubes through the sigmoid flexure. Had I the time I should like to comment on the more common types of rectal diseases occurring in infancy and childhood. A summary of them, however, has been given in the papers. I agree with Dr. Thrailkill that sometimes extra intestinal pressure may be the cause of diarrhea (obstructive type) and constipation (obstipation), but do not agree with him that it is the most common factor, because in my experience the seat of the trouble is most frequently found within the intestine.

It is difficult to understand why constipation is not more frequent when we come to study the points of difficult passage to the feces under normal conditions and appreciate the condition of affairs when they become abnormal. Such obstructive points named from below up are the anal sphincter, levator ani muscle, rectal valves, O'Beirne's sphincter, angulations of the sigmoid, swinging transverse colon, and splenic and hepatic flexures, to say nothing of the difficulty encountered by the solid feces from the cecum perpendicularly upward. Some physicians make a universal practice of divulsing the sphincter muscle in all cases of constipation—a most pernicious practice. Dilate or cut the sphincter when the anus is tight and a good result follows, but to do this when the muscle is relaxed does no good and may do considerable harm.

Surgical intervention is unjustifiable in obstinate diarrhea until medication, dieting and enteroclysis from below have been tried without benefit. Of the procedures devised for this purpose my cecostomy, which provides a quick, safe and sure way of healing the lesions causing the frequent stools, is preferable to all others, because by means of it the medicated fluid can be made to reach all parts of the entire intestinal tract. Two conditions prevail in chronic diarrhea: The first is the laxity of the bowel and surrounding tissues, which permit the easy introduction of instruments, and the second is the constantly dilated state of the rectum by gases. In these cases the finger passes into a dilated cavity, an opposite condition to that found in persons who suffer from constipation.

TUBERCULOSIS OF THE FEMALE ORGANS OF GENERATION AND THE PERITONEUM*

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HISTORICAL SUMMARY

The study of tuberculosis of the female genitalia was secondary to that of tuberculosis of the peritoneum, although Morgagni, in making a necropsy in 1744 on a young woman who had died from tuberculous peritonitis, found the uterus and Fallopian tubes filled with caseous material and considered these organs as being the primary focus of the disease. Similar conclusions were reported by others who had found similar conditions. At this time, however, tuberculosis of the female genitalia was found only in patients suffering from a constitutional invasion. The local condition was discovered only at autopsy and had no clinical interest; it was considered simply as a pathologic curiosity. This antedated the year 1825.

Christian Fenger divided the history of our knowledge of this disease into three periods. The first embraces everything antedating 1825, which I have described. The second includes the period from 1825 to 1884; during this period peritoneal tuberculosis became better known and more frequently recognized. It was thought at that time that simple peritonitis terminated in recovery; that is, in certain recognized cases of peritonitis the patients did recover, and this fact led to the conclusion that they must be simple, while tuberculous peritonitis was thought to be always fatal. The third stage from 1884 to the present time began when Koenig proposed laparotomy as a cure for tuberculous peritonitis. It is interesting to note that Koenig reached this attitude of mind from *a priori* deductive reasoning. He had had extensive experience in successfully opening and draining knee-joints and other articulations for tuberculosis. These joints are, as we know, closed cavities lined by a serous membrane; reasoning by analogy, therefore, he concluded that, if incision and drainage cures tuberculosis of a serous membrane in a joint, it should be equally as effective in the abdomen. Acting on this conclusion he submitted four patients suffering from tuberculous peritonitis to operation, and published a paper describing the procedure, in which he reported three recoveries and one death. In 1889 he presented a second paper in which he reported 131 similar operations collected from literature and his own clinic. The results showed 107 in satisfactory condition on leaving the hospital. Of these 107, seventy-four were cured and thirty-three improved. This was the beginning of the new era in the study of this disease, and to Koenig the modern world is indebted for an entirely new concept in its treatment. Many operators in various parts of the world followed in his footsteps and thus an experience was gained that changed materially the prognosis. It was learned that cures occur sometimes spontaneously; especially is this the case with children. In the crusade for eradication of the scourge of tuberculosis the search light is being turned on every phase of the disease, and vigorous means of stamping it out are being applied wherever its head appears.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Lou's, June, 1910.

PRIMARY FOCUS OF TUBERCULOSIS

The possibility of tuberculosis of the genitalia being a primary focus is a question of which most diverse views are entertained. Some of the most careful investigators positively deny it, while others as positively assert that it is possible, although all admit that it is very rare. The readiness with which women of the present day are submitting to gynecologic examinations, and the careful discriminating diagnostic acumen that is being directed to this line of research have brought to light cases in which the only lesion to be found in certain cases has been confined to the cervix, the vagina, or the uterus. The order of frequency with which the generative organs proper are involved is as follows: Fallopian tubes, uterus, ovaries, vagina, vulva.

Genital tuberculosis may be either primary or secondary. By the former it is generally understood that the focus in the genital organs is the primary seat of invading infection. Of necessity an ascending infection is generally primary, and a descending is secondary. According to Hegar the primary ascending infection is produced by penetration of germs from the outside directly to the mucosa of the vagina, uterus, tubes, and finally the peritoneum and ovaries; and the secondary, by penetration of germs into lymphatics through minute breaks in the continuity of the tissue of the genital canal, the germs being so carried to the Fallopian tubes directly or by way of the pelvic peritoneum into the tubes at the fimbriæ.

The source of the infection may be the seminal discharge of tuberculous men during intercourse. This has been strongly advocated by some investigators and seems *a priori* to be quite reasonable. But so many cases of tuberculosis of the epididymis with tubercle bacilli in the urine and seminal discharge in married men are known without the wife becoming infected that the chances seem to be against this theory. Even granting that this might be the source it would require unusually favorable conditions for its success. The preparation of the soil for the implantation of the infection by gonorrhea becomes a prerequisite. The puerperal state with its attendant traumatism offers favorable soil for primary infection. Martin has noted the fact that there is frequent coincidences between tubal pregnancy and tubal tuberculosis indicating a previous lesion.

Dührssen has had a case, mentioned by Amann, in which catheterization of the uterus to overcome sterility was followed by acute tuberculosis of the tube and peritoneum; whether infection was carried in by the catheter or whether the operative interference was simply the occasion for the acute outburst is a question.

It is possible that the street dust loaded with tubercle bacilli and swept up by a woman's skirts and thus deposited on the external genitals may be a source of infection.

TUBERCULOSIS OF THE PERITONEUM

Method of Invasion.—Tuberculous invasion of the tubes and ovaries may precede that of the general peritoneum, be contemporaneous with it or follow it. They are frequently found existing together and probably have the same origin. In tuberculous peritonitis, the disease reaches the peritoneum by three channels: first, hemic, through the blood-current, which gives rise to the acute miliary form of general tuberculosis; second, by contiguity, which form is secondary to tuberculosis of the lymphatic system, or to ulcers of the bowel which have not yet perforated the peritoneal coat; third, by continuity, which form arises from extension of ulceration in the bowels or Fallopian tubes. This is spread over the peritoneum by lymph-currents or, as some assert, by gravity along the serous surface. The direct primary hemic method is believed to be extremely rare.

Treatment.—There is practically a unanimity of opinion among all who are experienced in handling this disease, that, if possible and practicable, the focus of infection should be removed. On this point William J. Mayo says: "The treatment of tuberculous peritonitis should embrace not only the treatment of the peritonitis, which is symptomatic, but the removal of the source of infection, which in the majority of cases will be found in the Fallopian tubes, appendix or intestine." Murphy says: "The surgical treatment of tuberculosis of the peritoneum involves the following propositions: (1) to remove or shut off the source of supply to the peritoneum of new tuberculous debris; (2) to remove the products of the infective process from the peritoneum; (3) to increase the tissue proliferation for the encapsulation of the foci already present; and (4) to avoid mixed infection."

It is therefore desirable, to say the least, that a diagnosis of the presence of tuberculosis be made in advance of operation. The investigation should embrace a careful examination of the genital organs by touch, so as to determine their exact condition. The fact that this malady is frequently discovered in young girls should be kept in mind. The history of the case with relation to heredity, loss of appetite and weight, and the possibility of venereal infection, should be carefully considered. Martin recommends the application of Koch's tuberculin injection test. He also lays great stress on the subconjunctival instillation of Pirquet-Calmette. He considers this especially important in cases of tuberculosis complicating pregnancy, for the reason that the reaction determines the amount of resistance being offered by the patient, and thereby indicates the wisdom of allowing pregnancy to continue.

But when all these precautions have been taken into consideration, surprise may await the surgeon, on opening the peritoneal cavity. Allport has voiced this in his forceful and characteristic style when he says: "Uncertainty is the characteristic element in the preliminary diagnosis of all tuberculous infection of the peritoneum; surprise inevitably awaits the surgeon as he opens the abdomen; and the unexpected sits ever at the elbow of the pathologist as he examines the specimen in the laboratory."

Operation.—In dealing with any individual patient the method of procedure must be adapted to the condition presented and so may vary with every case. Experience has evolved some pretty definite and fixed rules. First, it must be constantly kept in mind that spontaneous recovery is often possible; at the same time, it must not be forgotten that Nature in her effort to overcome the disease can be greatly assisted in many cases by the surgeon. When the operator has made the abdominal incision and recognizes that he is in the presence of a more or less extensive tuberculous peritonitis, even with distinct foci in the uterine appendages, what shall be his rule of procedure? He should not be led astray by the protean forms of the disease that reveal themselves in successive cases. The whole situation becomes clear when he recalls the fact that there is but one basic lesion

of which the case in hand is one of its stages. Nature is ever waging her war of resistance. Her line of defense may be overwhelmed in the first onset and a condition of hopeless route and annihilation may be presented. This condition obtains in cases of ulceration, perforation, cheesy degeneration, and mixed infection, with resulting hectic fever. On the other hand, we may have a picture of disseminated miliary tubercles accompanied by abundant ascites; this exudate is indicative of a protective process due to irritation of the unaffected peritoneum. If in this process the individual has gained advantage in the fight, this irritation becomes an obliterative peritonitis, the final process resulting in fibrous or cobweb adhesions. Another picture is presented when the infection has invaded the peritoneum from contiguous organs, and presents an ulcerative or cheesy form which is accompanied by fibrous nodules, cicatrizing ulcers, masses of plastic exudate possibly here and there organized into obstructing bands of fibrous tissue. Adhesions and obstructing bands may form sacculated receptacles containing tuberculous debris known as pseudocysts, which may contain pus; this indicates mixed infection, possibly a colon bacillus. The omentum may also be matted together, being an extension of the same process.

As has been said, positive diagnosis is difficult and uncertain, hence the surgeon must be ready to deal wisely with the condition found. In the practical handling of these cases they may be divided into three classes, first, the ascitis; second, the adhesive; and third, the cheesy, attended usually with debris and pus.

In the first or ascitic variety the serum should be evacuated and the wound closed without drainage. These are the cases that recover so mysteriously and so permanently. As a sequel to this surgical intervention, the patient should receive the benefit to the fullest extent of such theraputic measures as climate, hygiene and diet. These are usually cases of general miliary peritonitis. If a definite focus is discovered in the tubes or the appendix, its removal is desirable. But quiescent adnexa which have been long buried in protecting adhesions should not be disturbed.

In the second class, or adhesive variety, if the plastic exudate is quite universal, and a tendency to organize into adhesive bands is apparent, no interference should be attempted unless a distinct focus can be easily reached and removed. The wisdom of attacking this for its removal will depend on the general condition of the patient. The wound should be closed without drainage.

In the third class of cheesy deposit, with collections of debris, some operators, acting on Koenig's suggestion of the analogy between articular joints and the peritoneal cavity, have advocated curetting, excision, sature, and dissection of the tuberculous masses. This is too radical surgery. Experience has shown that it is disastrous. Adhesions that presumably shut in intestinal ulceration should be carefully preserved, but collections of debris and pus should be as carefully cleansed and the cavity drained with cigarette drains of gutta-percha tissue. Gauze drains should be proscribed. Allport says: "Gauze drainage is a snare of the devil and is especially apt to be followed by serious and often fatal fecal fistula in the dry forms of tuberculous peritonitis. Statistics show conclusively that its practice leads to evils which are worse than the original disease."

Parker Syms in summing up an article read before the New York Surgical Society, March 13, 1907, says:

We have learned that operations should not be undertaken during the first year of infancy; we have learned that surgery offers but little hope in the adhesive variety of the disease; we have learned that the serous variety offers the best prognosis under the various forms of treatment and that the surgical treatment of this variety offers the best results obtainable in this disease. But the most important lesson we have learned is that the scientific operation of today is the one which has for its foundation the removal of the original focus of the disease, as the tuberculous Fallopian tubes, vermiform appendix, mesenteric gland, etc.

CASE REPORTS

My experience embraces seven cases widely distributed through my years of practice.

CASE 1.—Miss R. T., aged 32, referred to me as a subject of chronic general peritonitis, May, 1887. Without any suspicion of tuberculosis I opened the abdominal cavity for the purpose of drainage, and with the expectation of finding pus foci in the Fallopian tubes. The entire peritoneum was covered with a moist grayish exudate agglutinating universally the omentum and the coils of intestine. Never had I seen such a case before. There was almost no literature on this subject at that time, and in my ignorance I separated the adhesions and drained freely in all directions with gauze. The result, of course, was a prompt fatality.

CASE 2.—Mrs. S. M., at the New York City Hospital, came into my service May, 1894, as a case of double adnexal disease, the adhesions filling the entire pelvis. The patient's general condition was bad, with a daily temperature of 101 F. I performed a vaginal pan-hysterectomy. On examining the specimen during its removal miliary tubercles were apparent on the peritoneum surface of tube; the uterus and ovaries were cheesy. As the patient was in no condition to withstand a laparotomy, I elevated the patient in the Trendelenburg posture, and with retractors opened wide the vaginal opening into the peritoneal cavity, after which the pelvis was drained vaginally with iodoform gauze. The patient died in less than a year.

CASE 3.—Mrs. G. L., City Hospital, June, 1894, had symptoms of almost constant pain in the left ovarian region; diagnosis, salpingitis. On opening the abdominal cavity I found a condition of general miliary tuberculosis. The left tube and ovary were bound together by adhesions, the tube being large and covered with tubercles. There were no other adhesions, and no ascites. The left adnexa were removed, the patient was wheeled into the sunlight and the direct rays of the sun were allowed to pour into peritoneal cavity through the widely opened incision. The wound was closed without drainage. The patient made a complete and permanent recovery.

CASE 4.—Captain —— of the Salvation Army, presented herself at my office December, 1908, giving a history of constant pain in the right ovarian region, which had grown steadily worse for about a year, with the pain intensified at menstrual periods. There was loss of strength and flesh. The abdomen was distended and tympanitic, with dullness in the flanks. A hard nodular mass filled the right pelvis, crowding the uterus to the left side. I made a diagnosis of probable tuberculosis, and subjected the patient to a laparotomy at the Woman's Hospital, January, 1909. On opening the abdominal cavity I found coils of intestine firmly agglutinated together and firmly attached to the right adnexa, forming a large mass. The surrounding peritoneum and the fundus of the uterus, where the right horn could be seen peeping out of the coils of intestine, were dotted with miliary tubercles. In attempting to separate the intestines, I found that their walls were thoroughly invaded and quickly felt that the part of wisdom was to desist from further interference. I therefore sponged the cavity dry and closed the wound without drainage. Temperature ran daily to 101½ F. for about a week. Under careful and enforced diet, strength returned rapidly, and the patient left the hospital in four weeks. Outdoor life, day and night, and good nourishment were enjoined, and one year later she reported at my office greatly improved and ready to go back

to the ranks of the Salvation Army. There was no ascites and the pelvic mass had diminished to at least one-half of its former proportions. I have not seen the patient since.

CASE 5.—Miss E. D. M., aged 22½ years, was a private patient of Dr. Weiss, Mt. Vernon, N. Y., who has kindly furnished me the following history:

"I first saw the patient on Dec. 1, 1906, and found her suffering with an attack of acute lobular pneumonia (lower left lobe), with no cough but felt oppression in chest, had high temperature and felt sick.

"The history leading up to this acute condition in brief was this: The patient had been more or less tired for some five or six weeks, but still went to work, when she was suddenly taken down on or about December 1 with a chill and the acute condition above spoken of. The pneumonia took the usual course and on Jan. 24, 1907, some seven weeks after the beginning of the original illness the patient returned to work. At this time the pneumonia had resolved and, while her general condition was fair, she was still weak. The patient continued to go to her work (that of a stenographer), from Jan. 24, 1907, to Feb. 28, 1907, about five weeks, when she again noticed that she had severe pain in the left lower abdomen. She persisted in going to work, however, until February 28, when the pain became so great that she remained at home. Examination at this time showed nothing special in the thorax. There was a general swelling and distention of the abdomen. Percussion of the flanks showed some slight evidence of liquid in the abdominal cavity. There was thickening of left Fallopian tube with considerable pain on pressure; otherwise the patient's condition was negative.

"The usual hygienic and tonic treatment was instituted, the tentative diagnosis being tuberculous peritonitis. On March 18, 1907, Dr. Goffe kindly saw the patient with me and gave his opinion that an absolute diagnosis was difficult to make and advised close observation.

"Four days later patient was transferred to the Mount Vernon Hospital. The distention at this time had improved somewhat, the pain, however, in the lower left side persisted, and there was more or less fever with increased pulse-rate.

"During the following two weeks patient appeared to improve. In consideration of this fact, on consultation with Dr. Goffe, it was decided to do an exploratory laparotomy. Accordingly on April 3, 1907, under the direction of Dr. Goffe, I opened the abdomen and found the peritoneum studded with many patches, congested, and all the organs adherent. The parietal peritoneum itself was fully ⅜ of an inch thick. The left tube was found considerably enlarged and adherent. It was decided to close the abdomen without drainage and institute a sustaining and tonic line of treatment. After a few days the abdominal wound broke down and large quantities of pus came from the sinus.

"During the summer of 1907, the patient had chills with continued rises of temperature, sweats, lost considerable weight, and drained a great deal of pus. Examination showed some of these sinuses extending from 5 to 6 inches under the abdominal wall, one in particular, running up from the wound on the right side toward the liver.

"From April until October the fresh-air and hygienic treatment in every sense of the word was carried out to the letter; not only were the windows of the patient's sleeping apartment kept open day and night, but she was carried daily down to the lawn, where she passed her time either on a couch or in a hammock, thus enjoying the benefit of the outdoor treatment continuously. In addition to this she was given tonics and proper food.

"About August 1, 1907, the heretofore weak and bed-ridden patient began to show perceptible signs of improvement and, while her weight at that time could not very well be taken, her general appearance, in spite of the large amount of drainage from the wound, showed considerable weekly improvement. This went on continuously until in September the patient was permitted to walk about and take exercise. The improvement continued along these lines until October 6, when in addition to the pus drainage there were evidences of a fecal fistula.

"From October, 1907, until April, 1908, in spite of the inclement winter weather, the same open-air treatment was continued. By April 1, 1908, the patient had improved to such a degree that it was decided to transfer the patient to her own home. On the day of transfer (April 6), the patient's weight was found to be 102 pounds, as compared with 104 or 105 pounds, which was her best previous weight in health.

"From April 1 until August 1, 1908, she remained at home continuing in about the same general condition, with an occasional chill and a small break-down possibly of some gland or pus pocket as shown in the increase of drainage, improving, however, in general condition.

"She was permitted to take up some of her previous business duties. Accordingly, she accepted a position which permitted her four to six hours light work, with the coincident exercise of walking daily back and forth to her place of business. This test she stood remarkably well and, with the exception of one or two minor colds during the winter, improved to such an extent that on April 6, 1909, she appeared sufficiently recovered to be able to take up her more arduous duties as chief stenographer in a large law office in a town about ten miles away. This, of course, included not only walking to the station, but twenty miles' railroad travel as well. She stood the strain of this new occupation very well until midsummer when she began to lose in weight. She then took a three weeks' vacation in the Adirondacks and returned to work in August considerably improved.

"From that time, August, 1909, to the time of the present writing, March, 1910, she has enjoyed very good average health, with the exception of an occasional attack of bronchitis, generally the result of some indiscretion in dress. She looks well, eats well, and is able to carry out all the duties of her position and, while she tires from time to time, it cannot be said that she does so to any greater extent than any other person might under similar circumstances.

"During this time, namely, from about July, 1907, to March, 1910, an effort has been made at all times to carry out the open-air treatment, and particular attention has been paid to regular meals, largely of the proteid type, with very little medication. An occasional tonic or emulsion or a little ordinary cough medicine has been about all the medical remedies employed. No alcohol has been used. The patient has been advised to rest as much as possible and also to get as much sleep as circumstances will allow.

"The patient now looks well, has a good color, is strong and eats and sleeps well. She weighs at time of writing 103 pounds. There remains a small fistula which discharges some pus daily and occasionally some fecal matter, showing that the fecal fistula is not entirely healed. The only trouble the patient now experiences is that, when the sinus closes, the fecal matter seems to accumulate between the intestines and the abdominal wall and, until relieved, there is more or less pain and distress. Other than that the patient has no discomfort.

"In February, 1907, just subsequent to the attack of pneumonia, when the patient again went to bed, she menstruated continuously for about three weeks before being removed to this hospital. From about March 22, 1907, to Jan. 4, 1908 (a period of ten months), menstruation ceased entirely. On Jan. 4, 1908, it recommenced and has remained regular ever since in time, quantity and quality.

"A recent internal examination showed no especially abnormal conditions, except that the uterine organs and adnexa are fixed and there is some thickening and fulness in the left broad ligament and tube.

"Examination of pus made by our pathologist, Dr. Goldhorn, showed nothing of interest.

"My interpretation of the general low-grade peritonitis which commenced in March, 1907, is that the infection was due to the pneumococcus germ secondary to the original attack of pneumonia.

"In closing a word might be said in regard to the treatment. It will be noticed that after the original laparotomy it has been entirely medical and that there has been no surgical interference. This has been done advisedly, for the reason that the patient showed continuous improvement, and the condition and the internal conditions, so far as they could be interpreted from the laparotomy and subsequent course of

the disease, were such that any surgical procedure would be fraught with so much danger that the inconvenience of a small fecal fistula was considered preferable to a possible unfortunate outcome, the result of a surgical interference."

CASE 6.—Mrs. S. R. H., aged 26, had been married five years, had never been pregnant and had always been a great sufferer from dysmenorrhea. Four years ago the patient had an attack of pleurisy, being in bed ten days. During the following two years she complained of painful breathing and a stitch in the side. She lost flesh and became very weak. For the past two years she has suffered pain in both ovarian regions, at intervals so intense that morphin had to be used. Dec. 25, 1909, the patient entered Lawrence Hospital, Bronxville, N. Y., where I operated for salpingo-oophoritis. The adnexa of each side were bound together with plastic exudate and the tubes, as well as the neighboring coils of intestines, were freckled with miliary tubercles. The adnexa were removed with the exception of the left ovary which was apparently free from disease. There was no ascites. Recovery was prompt. Three months later, April 11, the patient reported a gain of 5½ pounds; she was never so fat in her life. She can walk now without pain, but tires easily, is living out of doors and sleeping on the veranda.

CASE 7.—Mrs. E. D., aged 44, was subjected to laparotomy for constant pain in the abdomen, which was accounted for by adhesions. There was also an old hardened chronic condition of the left adnexa. The omentum was attached to the sigmoid flexure and the fundus uteri. These adhesions were separated and part of the omentum removed, as was also the ovary and tube of the left side, which were bound firmly together. There was no evidence of tuberculosis present, but the pathologist reported that the walls of the tube were pretty generally invaded with tubercles. The patient made a prompt recovery and has been relieved of her pain. This case undoubtedly stands as an example of spontaneous recovery.

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ABSTRACT OF DISCUSSION

DR. EMIL NOVAK, Baltimore: The possibility of tuberculous peritonitis should always be borne in mind in any obscure abdominal condition, especially in the presence of an abdominal tumor. An illustrative case is that of a colored woman whom I saw about four years ago. She was brought into the hospital several weeks after delivery. Her only complaint was that the abdomen was just as large after delivery as before. After examination, we decided that there was probably an ovarian cyst complicating pregnancy. Not until the patient had been anesthetized and placed on the operating-table did we notice a deep-seated mass high up in the abdomen, which made us think that the condition was not one of ovarian cyst, but possibly one of tuberculous peritonitis. At operation, we found the woman suffering from tuberculous peritonitis with an encysted ascites, while the deep-seated mass proved to be a much infiltrated great omentum. The case was particularly interesting, in view of the fact that the presence of one abdominal tumor, the encysted ascites, had misled us, and that the other tumor, the infiltrated omentum, had put us back on the right track.

In estimating the good results following operative treatment in this disease, one must bear in mind that there is a strong tendency in many cases toward spontaneous recovery. This is well illustrated in the case reported by Louis, of a young man suffering with very advanced tuberculous peritonitis, with marked ascites, emaciation, etc. In this condition he fell a victim to Asiatic cholera, and recovered not only from the cholera, but also from the tuberculous peritonitis.

DR. C. C. FREDERICK, Buffalo: Patients with acute tuberculous peritonitis sometimes do not survive the shock of operation. With the exception of that one source of fatality following operation, I have never seen a patient die as a result of operation nor fail to see a patient apparently completely recover. I have seen many who have passed through the same course as that given by Dr. Goffe in the history of his patient. I have seen them go for a period of from six months to a year or a year and a half or two years with a stormy career, but eventually recover. I have never seen one left with a permanent fecal fistula or any other fistula, although the infection of the abdominal scar as the result of contact of the tuberculous infection with the wound at the time of operation is sometimes a source of trouble for several weeks or months after the operation. Four or five years ago, I began using drainage through Douglas' pouch in these cases almost as a routine procedure. I broke up all the adhesions in the adhesive cases in which the intestines had been lifted into the upper part of the abdomen by the accumulations of fluid beneath them and the peritoneum, all the mesentery having become adherent, so that one could see simply a mass composed of intestine in such condition that one could not see a convolution of the intestine. I free the adhesions completely, sometimes the operation being 30 or 45 minutes in duration. All the tuberculous surface is exposed to view and to contact. The abdominal cavity is sponged out. In women usually the focus of infection is the tube. Then a drain is passed down through Douglas' pouch. I always put in a big drainage tube with fenestræ at the top. The tube is kept in for weeks so as to insure free drainage from the lower part of the pelvic cavity even after the upper part may be shut off by adhesive inflammation and lymph. Such treatment is almost invariably followed by recovery in cases of tuberculous peritonitis.

DR. ROBERT T. GILLMORE, Chicago: Recently, I have been unfortunate enough to have three cases of tuberculous peritonitis or salpingitis. The symptoms are much the same as those of tuberculosis in other parts of the body, though not quite typical as regards the evening rise of temperature and the night sweats. In some cases the condition comes on insidiously with slight pain if the disease originates in a tube, and it may not be greater on the side on which operation shows the greater pathologic condition. The pain is dull and there is usually some tympanitis. Besides those symptoms I have been able to get nothing characteristic. The temperature may be normal; the pulse rapid. A diagnostic point which should not be neglected is the von Pirquet reaction. This is not a positive reaction, and in adults is of negative value. If old tuberculin is used and the reaction does not occur it may be assumed that the condition is not tuberculous. Another diagnostic point is leukopenia instead of leukocytosis, which occurs with any of the pus-producing organisms. One of my patients had been treated for three months for typhoid fever; owing to similarity of the clinical picture the diagnosis was not inexcusable, but had the indefinite bilateral pelvic mass been palpated the diagnosis would have been easier. Still another point is the finding of fluid in the abdomen. Sometimes there is postural accumulation of fluid, such as is seen in non-compensated cardiac conditions or in lesions of the kidneys. If disease of these two organs can be eliminated tuberculous peritonitis may be suspected.

DR. A. MILES TAYLOR, San Francisco: I have been working along these lines for some years, and I agree with Dr. Goffe that it is very difficult without a thorough knowledge of pathologic conditions to make a correct diagnosis. However, with the means we now possess in the laboratory, and with long experience, we should be able to overcome this. I am much interested in the case of tuberculous tube with ectopic gestation, this being the only case reported so far, other than those which I reported in a monograph written ten years ago, and in a paper which I read on May 10, 1910, before the San Francisco County Medical Society, entitled "Tuberculosis of the Fallopian Tubes as an Etiologic Factor in Extra-Uterine Pregnancy," wherein I reported 64 patients operated on, and 42 of whom were proved, by pathologic laboratory examination, to have tuberculous tubes. I believe that the primary infection may be, and is, introduced through the vagina, either by examination with finger, by coitus, or through abrasions of the vulva. In the secondary form it is introduced by foci in some other organ of the body, as the lung, hip, or knee joint,

or any other organ infected with this disease. The monthly congestion of these organs certainly is a field inviting to the tubercle bacilli, as well as to any other pus-forming microorganism. Many surgeons have reported tuberculous disease of the tubes even in girls of 17 and upward. Such men as Kaufmann, Amann, Kleinhans, Tuffier, Pozzi, Delbet, Hartman, Faure, Sick, Bier, Murphy, Ochsner, Tuholske, Riolanus, Vassall and Regnier de Graf have reported this condition, but none of these gentlemen has associated tuberculosis of the tube as a cause of ectopic gestation previous to this time.

DR. H. T. BYFORD, Chicago: When we separate extensive adhesions in cases with but little effusion we often get ulceration and breaking down of the intestinal walls. Hence, I think, it will not do to recommend the separation of adhesions in all cases. In view of the fact that many recover without operation, we should look at the matter from a conservative standpoint. These adhesions are Nature's method of limiting the disease, and, usually, form again. You cannot drain any part of the peritoneal cavity longer than a day or two. As a rule I drain only long enough to let out the excess of material which Nature has not been able to take care of. In most cases it is enough to let out the fluid and remove the septic focus, and, if desired, let in a little air or sprinkle in a little iodoform as a local stimulant. Although the ovaries and tubes may not be the primary focus, they usually require removal in cases of pelvic tuberculosis, because the monthly congestion seems to favor the development of germs.

DR. TOD GILLIAM, Columbus, O.: I presume that most of us are influenced by our own experience in these affairs. A few years ago, Dr. Byford and I were pitted against each other in Chicago on this same subject. I am a strong advocate of operative interference in tuberculous peritonitis with effusion. I am an advocate principally from my own experience, which has been most favorable, and because one gets immediate and convincing results. When the abdomen is opened and the fluid let out, usually that is the end of the trouble. I have sometimes had reaccumulation, but even this would disappear and almost every patient with uncomplicated tuberculous effusion has been cured. I never interfere with the adhesions of tuberculous peritonitis if I can help it, and I am very particular not to do any damage to the intestines. I have never known an intestinal tuberculous fistula to heal, and I dread them greatly. If I find that the tubes are involved, and I can get them out without damage to the intestines, I remove them. In cases of this class I have had excellent results.

DR. J. R. GOFFE, New York: I believe in the conservative method of treating these patients as I indicate in my paper. In one of the cases reported, the young woman had been suffering from one to two years and was finally obliged to give up her work in the Salvation Army. I made a diagnosis of tuberculous peritonitis, with the focus probably in the right appendages, and did a laparotomy. There was considerable serum, which I carefully sponged out. In attempting to separate the adhesions about the diseased appendages on the right side, I found that the walls of the intestine were involved, and, after separating just a few "of the uppermost coils of intestine," I desisted and restored them to their original position and closed the abdomen without drainage. She made a beautiful recovery, the most satisfactory convalescence I have ever witnessed. I take the stand that in all these cases conservative work is the best. Remove the focus, if easily and safely reached, but refrain from all serious damage to the tissues, drain out the fluid and close the wound.

Rectal Fistula.—Pelvi-rectal fistula may even track round and invade the bladder. In other cases the fistula may cause inflammation of the peritoneum, and from the peritoneum the inflammation may spread on to adjacent coils in the small intestine. The small intestine may even be adherent to the inflamed peritoneum in the pelvic area.—F. C. Wallis, in *Clinical Journal.*

A FORECAST OF THE UNITED STATES PHARMACOPEIA IX *

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It is generally well known that the Pharmacopeia of the United States of America had its origin in the desire of the leading men in the medical profession of a century or more ago to secure for their patients medicaments of uniform strength and activity and to eliminate from the practice of medicine, so far as possible, drugs and preparations of unknown value or of recognized uselessness. In accordance with these intentions the first edition of the Pharmacopeia of the United States was devised by capable, broad-minded men as a safeguard to the health of the American people, and the preface to that work outlines, at some length the objects and the ideals of the founders.

As an illustration of the aims of the originators I may be permitted to quote from the initial paragraphs of the preface to the first U. S. P.:

> It is the object of a pharmacopeia to select from among substances which possess medical power, those, the utility of which is most fully established and best understood, and to form from them preparations and compositions, in which their powers may be exerted to the greatest advantage.
>
> The fault of the lists of the materia medica which have been adopted in different countries has always been their redundancy, rather than their deficiency. The number of articles necessary in the management of diseases is always far short of the catalogue afforded by most pharmacopeias.
>
> The value of a pharmacopeia depends on the fidelity with which it conforms to the best state of medical knowledge of the day. Its usefulness depends on the sanction it receives from the medical community and the public, and the extent to which it governs the language and practice of those for whose use it is intended.

The assertion has been made that the materia medica of a century ago might be considered as "lilliputian" when compared with the variety of the materials available at the present time.

This statement should not go unchallenged in view of the fact that, despite the principles laid down in the preface quoted above, the founders of the U. S. P. nevertheless saw fit to include in that book more than 600 drugs and preparations, which they considered to be of sufficient merit to warrant continued use. In addition to this, a review of the "International Pharmacopeia," compiled by A. J. L. Jourdan, first published in 1828, will convince anyone that the materia medica of that early day was both complex and varied.

An interesting reflection of the direct effect of the compilation by Jourdan, just referred to, is found in the preface to the U. S. P. for 1830, which says in part:

> It is highly desirable that uniformity in the preparation of medicines should everywhere prevail, for the benefits accruing from the mutual interchange of the medical writings of different civilized nations must be greatly affected by any material difference in the nature or composition of the remedies employed. . . . It is a duty, therefore, which we owe to the cause of pharmacy to throw our own weight into that scale which already preponderates, and thus contribute to the production and maintenance of the desired uniformity.

The introduction of proprietary medical schools in the earlier decades of the nineteenth century appears to have been accompanied by a decadence of the high ideals

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

once dominant in American medicine and the United States Pharmacopeia was among the lines of effort to be most seriously affected. Without discussing this particular influence further, it may be pointed out that the variance of opinion regarding the field of usefulness for a pharmacopeia that has been manifested in this country during recent years, has led us to overlook the rather limited field occupied by the Pharmacopeia of the United States during nearly fifty years of its existence.

From 1830 to 1880 the chief and, practically, the only direct use for the Pharmacopeia was as the basis for a commentary, the U. S. Dispensatory, which was developed and continued by the chief editors and the publishers of the Pharmacopeia. During all of this period, the history of the Pharmacopeia is so intimately associated with that of the Dispensatory, that many otherwise intelligent medical practioners did not know, or at least, did not appreciate that the two books were not identical.

We should not forget, however, that the thanks of all who are in any way interested in the development of the science of medicine in this country is and ever will be due to the originators and editors of the "United States Dispensatory," Dr. George B. Wood and Dr. Franklin Bache for their far-sighted policy of continuing the Pharmacopeia along the high plane on which it was founded.

The really slow deviation from the original intent of the founders of the Pharmacopeia is well illustrated by Table 1, showing the comparative number of vegetable, chemical and animal drugs and the number of Galenical preparations in the several editions of the U. S. P.

TABLE 1.—THE NUMBER OF DRUGS AND GALENICAL PREPARATIONS IN THE VARIOUS EDITIONS OF THE U. S. P.

	1820.	1830.	1840.	1850.	1860.	1870.	1880.	1890.	1900.
Vegetable	254	269	281	297	312	321	264	255	220
Chemical	109	116	124	140	176	192	233	239	268
Animal	12	15	17	19	18	18	15	18	21
Galenical	246	229	266	312	367	440	481	473	443
General Formulæ	...	...	...	...	...	...	4	5	6
Total.....	621	629	688	768	873	971	997	990	958

It will be noted that, in the first revision of the U. S. P., the number of official articles was actually reduced and that, following this date, the sum-total of articles increased rather rapidly to 1870 and apparently reached a maximum in 1880, from which time the number of official articles appears to be again gradually decreasing.

The evident causes for the increases in the number of articles official in the U. S. P., in the decades from 1840 to 1870 inclusive, are of course varied. Not the least among these causes, however, is the part taken by pharmacists in the several revisions including and following that of 1840, and the influence that the introduction and increase of eclectic, botanic and other "new" schools of medicine had on the practices of medicine, as well as pharmacy, in these United States.

Altogether, the several editions of the Pharmacopeia appear to reflect the decadence of the medical instruction and medical ideals in this country in a way that as yet, has not been sufficiently well recognized.

The U. S. P. VI, or that of 1880, as it is more generally known, represents a revolution in Pharmacopeia-making in this country, but, unfortunately, the revolution was originated and carried out by pharmacists, and medical men took little or no part in it.

Dr. E. R. Squibb,[1] in commenting on the U. S. P. VI, says:

> It is by far the best Pharmacopeia of the time, because it is the result of more labor and research than any other, and by hands as skilful as any other.
>
> In its general complexion and tone it is pharmaceutical rather than therapeutical. That is, while its general tendency is to both polypharmacy and polytherapy, its greatest redundancy is in its pharmacy; and this is not to be wondered at, from the constitution of the committee of revision and from the fact that the pharmacists did almost all of the work.

Since 1880 the pharmacists of the country have continued to bear the burden of pharmacopeial revision with little or no assistance from the medical profession, and the U. S. P. has continued to be, primarily, a pharmaceutic reference-book, with little or no regard to therapy or therapeutic needs.

Some indication of the comparative scope of the Pharmacopeia of the United States is evidenced by Table 2, showing the number of titles included in fourteen of the leading pharmacopeias of the world, with the comparative number of general headings, crude drugs, chemicals and Galenical preparations.

TABLE 2.—NUMBER OF TITLES, ETC., INCLUDED IN THE SEVERAL NATIONAL PHARMACOPEIAS

Pharmacopeia.	Published.	Total Titles.	General Headings.	Drugs.	Chemicals.	Preparations.
British IV.....	1898	826	0	189	186	451
German IV.....	1900	626	23	193	176	234
United States VIII..	1905	958	6	241	268	443
Spanish VII.....	1905	1073	0	269	260	544
Dutch IV.....	1905	673	17	200	182	274
Japanese III.....	1906	706	14	204	207	281
Belgian III.....	1906	722	25	185	173	329
Austrian VIII.....	1906	698	19	232	160	287
Danish VII.....	1907	489	22	142	144	181
Swiss IV.....	1907	853	29	244	227	353
Swedish IX.....	1908	583	19	144	179	241
French V.....	1908	1122	48	271	293	510
Italian III.....	1909	669	18	164	194	294
Hungarian III.....	1909	551	18	142	183	204

Excepting the pharmacopeias of Spain and France, which are dominated by conditions not prevailing in other countries, it will be noted that the U. S. Pharmacopeia excels in the total number of official titles.

Another interesting fact is that the two pharmacopeias, the Swiss and British, having the next highest number of official titles are, like the U. S. P., in a way controlled by the dispensing interests involved. The Pharmacopeia of Switzerland is published under the auspices of the Swiss Pharmaceutical Society, while the British Pharmacopeia is largely dominated by the Society of Apothecaries, which represents the more numerous and more influential "general practitioner" who, with the assistance of the "chemist and druggist" is well able to dictate the scope and content of the Pharmacopeia.

Eliminating the pharmacopeias published in countries where special conditions appear to make a large number of official articles necessary or desirable, our own Pharmacopeia is the most prolix, and, as constituted at the present time, does not reflect a satisfactory development of medical science so far as pharmacal therapy is concerned.

Recognizing the old adage that "a multiplicity of remedies is an indication of incompetency or ignorance" physicians and others who are interested in divorcing the science of medicine from the possible domination of commercial interests looked forward rather anxiously to the outcome of the United States Pharmacopeial Con-

1. Ephem. Mat. Med., 1883, p. 201.

vention held in Washington on May 10, 11 and 12 of this year.

That this outcome is not altogether promising, from a progressive point of view, is evidenced by the reports of the convention which have appeared in the several medical and pharmaceutical journals. Thus the *New York Medical Journal*, (May 14, 1910, p. 1020) in commenting on the outcome of the Pharmacopeial Convention, says regarding the scope of the Pharmacopeia:

> The convention took the ground that the extent to which a drug was used is a safer criterion of its availability for introduction into the Pharmacopeia than the expression of opinion regarding its therapeutic value. Consequently the use rather than the therapeutic value of a drug will be taken as a guide by the committee regarding admissions and deletions.

This expression of opinion is justified by the fact that the limiting clause that, "there should not be included rarely used substances or those whose value and use has not been established" was, on motion, eliminated from the first paragraph of the general principles to be followed in revising the Pharmacopeia.

The paragraph on scope of the Pharmacopeia as finally adopted provides essentially that the Committee of Revision be authorized to admit into the Pharmacopeia any medicinal substance of known origin; but no substance or combination of substances shall be introduced, if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary or patent rights, and the list of substances should be carefully selected, with standards for identity and purity as far as possible.

So far as the physician is concerned, this one paragraph involves the important features of the revision of the Pharmacopeia, as the interpretation put on it by the majority of the Committee of Revision will determine whether the Pharmacopeia of the United States is to be developed solely as a legal standard for the many thousands of medicaments used by man in the treatment of disease, or whether it shall continue as a basis for medical prescribing and contain only descriptions, formulas and standards for therapeutically active or useful medicines.

In this connection, it may be well to point out that the Committee of Revision has been made responsible for the nature and content of the U. S. P. IX and that the members of the committee will not be in a position to shirk criticism should the result of its work not comply fully with the wishes of the interested owners of the Pharmacopeia or the accepted facts that are clearly evidenced at the time.

It goes without saying, therefore, that the members of the medical profession still have an opportunity to demonstrate the validity of the claim that the Pharmacopeia, being issued under the joint authority of physicians and pharmacists, should be an authoritative list of remedial agents representing the best and most active therapeutic agents known to physicians and of the purest and most reliable quality that can be furnished by pharmacists.

The question frequently heard, "Who is to determine the medicinal value or usefulness of a medicine?" is based on sheer sophistry. The value or usefulness of a medicament is to be determined according to the best light of the day, and no one will believe for a moment that the substance thought useful to-day will continue to be considered so for all time to come.

The radical nature of the changes which have been brought about in our ideas regarding the usefulness of medicaments can be well illustrated by the following items from the materia medica of a century or more ago:

"Toad powder" was at one time a valued medicine and was said to "provoke urine and cure the dropsie, if curable. Outwardly applied, it draws out the poison of carbuncles. Blown up the nostrils, it stops their bleeding. Applied to the soles of the feet, it draws away distempers from the head, helps frenzies and fevers. It is also good against old ulcers and fistulas and biting of serpents."

Spermaceti, an article known to modern medicine less than three hundred years, was lauded during much the greater portion of this period as "the sovereign'st medicine on earth for inward bruises resulting from falls and similar injuries." It was also asserted to be "of considerable use in pains and erosions of the intestines, in coughs proceeding from sharp defluxions, and, in general, in all cases where the solids require to be relaxed or acrimonious humours to be softened."

No medical practitioner to-day uses toad powder as a diuretic or spermaceti as a never-failing remedy for "inward bruises," and yet he would be rash indeed who would assert that the practitioner of old was absolutely wrong and that toad powder did not contribute, in a way, to the progress of the science of medicine.

The frequently made assertion that "the Pharmacopeia is the law of the land so that its first valuation and its greatest function is to provide a standard for purity and for strength" is based on a misconception of fact and a misinterpretation of the letter as well as the spirit of the Food and Drugs Act of June 30, 1906, which specifically mentions the United States Pharmacopeia and the National Formulary.

In the discussion on the scope of the U. S. P. no one appears to have been willing to concede the fact that in law, in name and in possible scope these books are equal, with, perhaps, a number of counts in favor of the legality and usefulness of the National Formulary. In this connection we should not forget that, technically at least, the "United States Pharmacopeia" does not as yet exist.

Without going into a detailed discussion of the merits of the two books as an available legal standard it may be permissible to call attention to the Standard Dictionary definitions, as follows:

Pharmacopeia: "A book, usually published by authority, containing the formulas and methods of preparation of medicines etc. . . . ."

Formulary: "1. A compilation or collection of forms, formulas, doctrines or precedents. . . . 3. A ritual or formula."

As designating titles for a treatise on medicinal substances the two words are practically synonymous apart from their derivation, one being Greek, the other Latin.

So far as the practicability of developing either book as a legal standard for any and all substances is concerned, it would appear that the owners of the Pharmacopeia are, at least, divided as to the desirability of having their book used exclusively for this purpose, while the owners of the National Formulary are unanimously in favor of providing standards for all articles not included in the Pharmacopeia of the United States.

Thus the American Pharmaceutical Association in deciding on the scope of the National Formulary held that the therapeutics or therapeutic incompatibilities of the National Formulary preparations are not within the province of the National Formulary committee. "The physician may reasonably be expected to know what he wants, and if he chooses to prescribe preparations which are therapeutically incompatible it is the duty of the

pharmacist to supply what is ordered. The Committee on National Formulary feels it to be its duty to supply formulas for medicaments which may be prescribed by physicians, if the demand is sufficient to justify our attention and if an acceptable formula can be devised or obtained."

With the need for developing the Pharmacopeia as an all-embracing standard for drugs and medicines eliminated, and with at least a fair-sized minority of the members of the Pharmacopeia convention opposed to such use, it would appear as though the Committee on Revision would certainly be going contrary to the best interests of the American people in deviating from the time-honored scope and use of the Pharmacopeia.

Physicians have long since recognized that the practice of medicine is not limited to the administration of drugs and preparations of drugs, and that the prevention of disease and the prevention of further spread of disease, when it does occur, are among the requirements that the medical practitioner should not and dare not lose sight of.

With these varied requirements to prepare for it is obviously impossible for the medical student, in the limited time at his disposal, to acquire a working knowledge of all the drugs and preparations which have been used at one time or another, and it would appear that no more important public health measure could be introduced at the present time than the outlining of a therapeutically active materia medica as a basis for the instruction of medical students and for reference by physicians now in practice.

In conclusion allow me to call attention once more to the quotation from the first edition of the Pharmacopeia which asserts that "the value of a Pharmacopeia depends on the fidelity with which it conforms to the best state of medical knowledge of the day. Its usefulness depends on the sanction it receives from the medical community and the public, and the extent to which it governs the language and practice of those for whose use it is intended." Can we, on the eve of the corresponding decade of the twentieth century, do better, or will we do less?

Twenty-fifth and E Streets, N. W.

ABSTRACT OF DISCUSSION

DR. A. S. LOEVENHART, Madison, Wis.: Since the Pharmacopeial Convention left the matter to the Committee on Revision to decide, I think it would be proper for this Section to express its wish that all substances be omitted that have not a recognized therapeutic value and that are unnecessary duplications.

DR. C. S. N. HALLBERG, Chicago: I take decided objection to Mr. Wilbert's statement in reference to the makeup of the Pharmacopeia. I made a special study of the makeup of the European pharmacopeias last year. The British Pharmacopeia is dominated by the Medical Council and there is not a pharmacist on it. The council delegated the revision to Professor Attfield.

The U. S. Pharmacopeial Convention absolutely refused to listen to some of the medical delegates, because they knew that they did not have back of them the practices of 140,000 physicians of the United States. We pharmacists must cater to the physicians who write prescriptions and use medicine. While it is interesting that there are medical men, in Baltimore particularly, who have wonderful ideas on drugs, seldom write prescriptions, and rarely, if ever, prescribe medicine, they have our sympathy, but they have not our real heartfelt thanks, because they do not act as real pharmacologists. To give a concrete example: I have been told that out of Kansas alone last year there were shipped 200,000 pounds of echinacea, nearly every pound of which went into regular and proprietary pharmaceutical preparations, to be used by physicians. Yet the Council on Pharmacy and Chemistry will not admit echinacea to New and Nonofficial Remedies. When such an army of medical men is using it as an antiseptic and astringent, by what right do you say that these men do not know how to practice medicine, or do not know what kind of medicine to use?

DR. A. S. LOEVENHART, Madison, Wis.: If usage is to be the criterion, then Peruna should be in the Pharmacopeia. I claim that we cannot afford to let certain articles go into the Pharmacopeia on the basis of usage. We do not limit physicians; they can use what they wish, but a book that is supposed to represent, as Mr. Wilbert said, the best medical thought and to have the medical profession behind it, must not include drugs on the basis of usage.

DR. C. S. N. HALLBERG, Chicago: After the U. S. P. Convention is past you cannot do anything by any action taken here to influence the committee. The committee of this Section, and I believe the committee of the American Medical Association on the Pharmacopeia, engaged in a campaign for six months trying to test the medical sentiment of this country in order to get crystallized the ideas and bring them before the convention. What was the result? Not one idea did they carry through, because the Pharmacopeial Convention represented the actual state of pharmacy and medicine in this country as near as it could be formulated, and that is why they stuck to the original principles. The Pharmacopeia is for a standard of strength, purity and quality of medicinal substances and gives directions for their preservation, valuation, preparation and compounding, and not one more syllable about it, nor can you, by any stretch of imagination, add another attribute to it, so that I do not see that any good can be accomplished by our expressions of opinion.

DR. F. E. STEWART, Philadelphia: In 1880, this whole subject came up in a discussion with Dr. Squibb, and I remember what he said, and thirty years' experience confirms it, namely: "A large part of the demand for new remedies is a fictitious demand, caused by advertising. Take antipyrin; on account of advertisement it was widely used, but after the patent expired the demand fell flat."

DR. A. S. LOEVENHART, Madison, Wis.: We want the Pharmacopeia to represent the best medical knowledge as to what drugs are useful in the treatment of disease. We would rather let much-used drugs, which are worthless according to general medical opinion, go in the National Formulary and let them be in the hands of the pharmacists who come in contact with the physicians who are handling this class of drugs. Dr. Hallberg states that the United States Pharmacopeia should be a standard for medicinal substances and that it contains nothing about therapeutics. The mere proposition that it is a standard of medicinal substances proves that there is a large element of therapeutics concerned in it. The definition of medicinal substances is: "those useful in the treatment of disease." Dr. Hallberg puts the interpretation that anything sufficiently used by the medical profession is useful in the treatment of disease. I hold that we should accept the best obtainable medical opinion as to what should be included in the Pharmacopeia. That is a simple statement of the difference between us.

Dr. Hallberg has said that the medical profession has lost its chance for the next ten years. I disagree with him; the whole thing is entirely open. The Committee on Revision can include drugs to meet the needs of the people whom it is trying to serve. Now if we, as a part of their constituents, state that we hope these things will not be continued, it will strengthen them to leave out drugs which have been included merely on the basis of usage. With regard to those who shall say what drugs are useful, we can leave them to the general trend of recognized therapeutic value. We must leave to the revision committee to determine by the general trend of medical literature and by methods which they must work out. It should be pointed out that the medical men on the revision committee are in the great minority.

DR. R. A. HATCHER, New York: There is one point that should not be altogether overlooked. There can be little doubt that the controlling influences in the convention are not in favor of restriction. It might be claimed in the future that by silence we gave tacit assent to the program, and I do believe that our protest may have considerable value, although I doubt very much whether it will have a corresponding amount of influence.

DR. C. S. N. HALLBERG, Chicago: The subject is entirely left open to the Committee on Revision, as Dr. Loevenhart states, but those that know the Committee on Revision know that the members have already made up their minds to adhere to those principles which were under discussion, and that the Committee on Revision is certainly not in favor of any radical proposition. Still I do not object to the proposed action, and I think with Dr. Hatcher that it might do some good, if for no other reason than as a matter of record to protest against the admission of some article which might possibly be objectionable.

[The Section voted in favor of the expression of opinion as suggested by Dr. Loevenhart.]

A SIMPLE BLOODLESS OPERATION FOR HEMORRHOIDS*

LOUIS J. HIRSCHMAN, M.D.
DETROIT

It is my intention to give briefly my technic for the removal of certain forms of internal hemorrhoids without the profuse hemorrhage with which this operation is usually associated in the minds of most practitioners. Having observed that most patients suffering from hemorrhoids of the internal variety are more or less anemic from the continued and constant loss of blood, as a result of their hemorrhoidal trouble, I began three years ago to use a technic which would minimize operative hemorrhage and conserve the patient's blood-supply.

With this aim in view, I have developed and have been using a very simple technic which is applicable under local as well as general anesthesia and therefore can be used in those weak, run-down patients suffering from any of the wasting diseases in whom the use of a general anesthetic would be inadvisable if not positively dangerous. The method is adapted to the removal of any variety of internal hemorrhoids and particularly to the pedunculated and prolapsing varieties.

Interno-external hemorrhoids can also be treated by this method. Very few instruments are required and in many cases dilatation of the sphincters is not necessary. The technic under general anesthesia is much the same as under local anesthesia, and inasmuch as local anesthesia is much safer and fully as satisfactory as general anesthesia for this work, I shall describe the operation as I perform it under local anesthesia.

The drugs which may be used for the production of local anesthesia in this region are various. Cocain, eucain, stovain, novocain, alypin and chloretone, as well as their various combinations with other salts, have been used in varying strengths of solution and with varying success by different workers.

During the past six months I have been employing for this operation, as well as in many other operations on the anus and rectum, a sterilized 1 per cent solution of quinin and urea hydrochlorid. I am using this solution, which is prepared from the double salt of quinin and urea (which is made by dissolving quinin hydrochlorid in hydrochloric acid, adding pure urea, filtering the mixture through glass wool and allowing it to crystallize), because of the following advantages over any other anesthetic drug:

First: It is non-toxic and can be given in unlimited dosage. Brewster of Kansas City has used 100 grains intravenously within six hours in a patient suffering from pernicious malaria.

Second: When a solution containing 1 per cent. or over is used the hemostatic effect produced by the deposition and contraction of fibrinous exudate around the blood-vessels is of great value in preventing postoperative oozing.

Third: The anesthetic effect is prolonged; in many cases postoperative anesthesia has lasted from four to five hours to as many days and longer.

Fourth: While equal to cocain in anesthetic power, it has the advantage of being very much cheaper, and is a drug which is almost always available.

One advantage of the operation to be described is the fact that but few instruments are required. Those necessary are: a one-half ounce aseptic hypodermic syringe provided with a fine caliber sharp-pointed needle 2 inches in length, scalpel, pointed scissors curved on the flat, blunt-pointed, long-handled, curved ligature-carrier, my pile forceps, and sometimes a Sims retractor.

The patient is given ¼ grain of morphin about twenty minutes before the operation is to be performed, a soapsuds enema followed by a boracic acid enema is given, and the patient is placed on the operating table in the right or left lateral position. After the region of the anus is washed and sterilized the sphincter is anesthetized by the injection of from 10 to 30 minims of sterile 1 per cent. solution of quinin and urea hydrochlorid. The technic which I employ is as follows:

A point one-half inch below and posterior to the posterior commissure of the anus is selected and touched with a swab moistened with pure phenol. After waiting 2 or 3 minutes, or until this point is thoroughly blanched, the needle of the syringe is passed inward, upward and laterally in a V-shaped direction for about three-quarters of an inch, gradually going down into the sphincter muscle, but not entirely through it. While doing this it is well to pull down the sphincter by the index-finger of the left hand passed into the anus while the injection is being made with the right. From 10 to 20 drops of the solution are slowly injected and the needle is retraced to the point of puncture but not withdrawn. It is then pushed up on the other side in the same manner and this side is likewise injected. Three or four minutes are allowed to elapse to allow the anesthesia to become complete. Then a mechanical vibrator fitted with a cone-shaped vibrator, which has been well lubricated, is gently pressed into the anal orifice. About 3 minutes with the rotary stroke will dilate the sphincter to about the caliber of a silver dollar, which is sufficient to allow the operation to be done in a most satisfactory manner.

It is not absolutely necessary to use the vibrator. In its place one may use the index-fingers of both hands inserted opposed to each other and well lubricated, and by separating them with a gentle massage motion the sphincter may be dilated as satisfactorily in from three to four minutes.

After dilatation has been accomplished, the most dependent hemorrhoid is injected with the 1 per cent. quinin and urea hydrochlorid solution, enough being in-

* Read in the Section on Surgery of the American Medical Association, at the Sixty first Annual Session, at St. Louis, June, 1910.

jected to blanch the hemorrhoid and give it the appearance of a Malaga grape. The lower extremity of the hemorrhoid is then grasped with the pile forceps and pulled down so that it is on the stretch. The long-handled ligature carrier threaded with No. 2 twenty-day, chromicized catgut is passed in through the mucous membrane of one side down to the base of the hemorrhoid and around to the opposite side in such a manner as to include the upper third of mucous membrane covering the pile and the blood-vessels which run longitudinally underneath, but not encircling the whole hemorrhoid as in the old ligature operation. This ligature should be placed just at the juncture of the hemorrhoid and the normal mucous membrane of the rectum. It is then firmly tied, when it will be found that the principal blood-supply of the hemorrhoid has been included in the ligature and shut off. The hemorrhoids on either side are dealt with in like manner and lastly the anterior and upper ones.

A suppository containing orthoform, 3 grains, thymol iodid 3 grains, and quinin hydrochlorid 20 grains, is inserted and the patient kept in the recumbent position for 10 minutes and then allowed to rise from the table. There will be a certain amount of edema or swelling during the first twenty-four hours, but this gradually disappears and is of no consequence. The hemorrhoids gradually shrink until, at the end of three or four weeks, there is nothing left but a small nub of connective tissue which can be painlessly snipped off at any time or left if one so desires.

This, which is the simplest form of technic, is peculiarly adapted to those desperate cases of anemia in which the daily loss of blood from the hemorrhoids is far greater than the patient's blood production. It can be performed in 10 or 15 minutes and involves the least expenditure of endurance on the part of the patient.

In the majority of my cases, when the necessity for haste and conservation of blood-supply is not quite so imperative, I modify the technic as follows:

Anesthetization, dilatation, and ligation are performed as above outlined. The hemorrhoidal tumors are then grasped in order by the pile forceps and incised in their longitudinal axes from a point about one-quarter inch below the ligature and extending down to their distal extremities. After separation of the sides of the incision, the blood-vessels and connective tissue which make up the body of each pile are dissected out *en masse* with the curved scissors and cut off one-quarter inch below the ligature. This longitudinal wound in each case is allowed to remain open and heals in from three to five days without suture. This disposes of the hemorrhoids at once, and does away with much of the swelling which necessarily follows the preceding technic.

In those cases in which there are pedunculated prolapsing hemorrhoids, it is not necessary to dilate the sphincter. After the preparation outlined above, the patient is asked to strain while in the squatting position, or while lying on his side in the Sims position, while the operator is everting and pressing back the anus by manual pressure just outside of the margins of the external sphincters. The same technic as outlined above is carried out in regard to injection of anesthetic, ligation, and excision, and the operation is completed by the insertion of the anodyne suppository already mentioned.

The after-care is very simple. The bowels are kept confined for three or four days; on the beginning of the third day, white petroleum oil is administered in dram doses before meals and at bedtime. This acts in a purely mechanical way, preventing the formation of hard stools and making the movements very easy. A simple soapsuds enema given through a small soft rubber rectal tube on the third or fourth day will start the evacuation of the bowels, which should be encouraged daily thereafter.

The use of quinin and urea hydrochlorid as an anesthetic possesses the great advantage over other drugs, of keeping up postoperative anesthesia of the parts, in many cases, during the entire convalescence of the patient. I consider that with the simple technic just outlined, and this newest local anesthetic, hemorrhoids can be removed without the patient suffering pain either during the operation or following it.

My experience with this technic under local anesthesia produced formerly under injections of 0.1 per cent. solutions of beta-eucain lactate and latterly under quinin and urea hydrochlorid—in all over 300 cases—leads me at this time to offer it to the members of this Section with the hope that it will prove as satisfactory in their hands as it has in mine.

604 Washington Arcade.

A CASE OF PERNICIOUS ANEMIA

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ARCADIA, WIS.

In the following case the patient has been under my observation during the past two years, commencing June 21, 1908. The case is a typical one of the severe type and illustrates the remissions which are so characteristic of the condition and also the manner in which the condition for the time being responds to arsenic.

Patient.—D. N., unmarried, farmer, Irish, aged 58. His father died at 86; his mother died at 73 of pneumonia. Brothers all alive and well; two sisters died in infancy.

History.—He had a broken leg five years ago, otherwise he has always been healthy. He has been an exceptionally hard drinker for a number of years, and is frequently drunk for days at a time. Six months ago he took cold after exposure during a drunken spree and has not recovered. He complains of general weakness especially of the legs, shortness of breath, loss of appetite, sore mouth, dry cough and inability to undergo any ordinary physical exertion.

Examination.—Tall, thin, large frame, skin pale yellowish color; muscles flabby, mucous membranes very pale and gray. Visible forcible pulsation of arterial trunks in neck and abdomen. Teeth poor; no sores in mouth; pulse 80, regular and soft. Soft systolic heart murmur at apex. Arteries very hard; the patient has lost considerable weight, but does not know exactly how much.

Urine Examination: Amount of sample examined, 4 oz. Very pale, clear, specific gravity 1,004, acid; no albumin, no sugar, no bile, no indican, no sediment. He had been drinking beer previous to voiding this sample.

Blood Examination: Red blood cells, 952,000; white blood cells, 2,850; hemoglobin, 30 to 40 per cent. Tallqvist; index plus; marked poikilocytosis. Many macrocytes and microcytes; many megaloblasts and a few normoblasts seen; almost no blood plates; polymorphonuclears decreased; small lymphocytes and eosinophils increased; few myelocytes.

A diagnosis of pernicious anemia was made.

Treatment.—Tincture of nux vomica and tincture of gentian compound were given before meals for stomachic and general tonic with Fowler's solution in ascending doses after meals. The patient was told to stop work and to take full nourishing diet.

Course of Disease.—July 22, 1908: The patient gained 12 pounds and felt much stronger. R. B. C. numbered

2,050,000; W. B. C., 2,375; hemoglobin, 50 per cent.; Tallqvist, no megaloblasts and one normoblast seen.

Aug. 24, 1908: Patient gained 14 pounds in all, felt well and was doing light farm work. R. B. C. numbered 3,760,000; W. B. C., 7,725; hemoglobin, 70 per cent.

Nov. 15, 1908: The patient has gained 23 pounds since beginning treatment, and has been doing regular farm work for the last three months. R. B. C. numbered 3,728,000; hemoglobin, 75 per cent.; no megaloblasts or normoblasts; many macrocytes and microcytes; poikilocytosis. The patient has been taking Fowler's solution continuously until the last three weeks.

Dec. 13, 1908: Patient continues about the same; still doing regular farm work and taking no medicine aside from an occasional laxative.

Feb. 26, 1909: Patient feels about the same. R. B. C. numbered 1,904,000; hemoglobin, 60 per cent. Patient shows the beginning of decline.

April 10, 1909: Patient has been feeling weak again for the last three weeks. Temperature, 100 F.; pulse, 95; mouth feels sore; R. B. C. numbered 1,576,000; hemoglobin, 40 per cent.; few megaloblasts and one normoblast; poikilocytosis. Patient put on Fowler's solution again as before.

From now on patient got stronger and went to work again, and was not seen again until Sept. 16, 1909, when he was weak, short of breath, very pale. R. B. C., 904,000; hemoglobin, 20 to 30 per cent.; marked poikilocytosis, with many macrocytes and microcytes; one megaloblast. Patient put on arsenic again as before.

Nov. 1, 1909: Patient feeling well again; has been in the hospital in bed for the last six weeks. He has been taking Fowler's solution and has gained in weight and strength. R. B. C., 2,224,000; hemoglobin, 60 per cent.; no megaloblasts or normoblasts.

He felt well for some time after this, but did not present himself for further examination. In February, 1910, he began to show evidence of weakness and spasticity in arms and legs. This progressed until by June 1 he was confined to bed almost completely paralyzed. There was loss of control of the bladder and rectum. He became gradually weaker, until he died on June 25.

The severity of the case and the promptness with which the conditions improved on taking Fowler's solution are my reasons for reporting this case.

ADIPOSIS DOLOROSA (DERCUM'S DISEASE) IN MOTHER AND DAUGHTER

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This report of two new cases of adiposis dolorosa will shed no new light on the etiologic factors or treatment. Fifty cases have been reported;[1] eight autopsies have been performed so far. In seven the thyroid was abnormal and in five of them the pituitary body.[2]

Traumatism, toxemia, continued nervous strain, the menopause, alcoholism, syphilis, tuberculosis and various other causes have been duly considered by various observers. So far, in view of the autopsy findings, the abnormalities of internal secretion of the thyroid and pituitary surely play a most important part.

Cheevers reported a case in which a father and a sister were affected, and Hammond made a report of two cases in sisters. In my cases it is a mother with the disease well advanced and of five and one-half years' duration. The daughter has been affected for eighteen months.

1. Price, G. E.: Am. Jour. Med. Sc., May, 1909.
2. Stern, H.: Am. Jour. Med. Sc., March, 1910.

Osler[3] has shown us clearly that we must differentiate between adiposis tuberosa simplex, adiposis cerebralis, adenolipomatosis and multiple lipomatosis. Particular care was taken not to confound symmetrical adenolipomatosis with adiposis dolorosa in Case 1.

CASE 1.—(Dispensary No. 21,140, May, 1910).—*Patient.*—Mrs. B., white, housewife, aged 64. Diagnosis: adiposis dolorosa, with anacid gastritis. Family history, unimportant; one sister died of tuberculosis. Four living children, negative to cancer, syphilis or alcoholic excess, insanity, or epilepsy.

Past History.—The patient had the usual children's diseases; no scarlet fever, but she had diphtheria when she was 16 years old. In 1880 she was paralyzed on left side, and again in 1897. She has had severe spells of indigestion for about five years, with almost constant burning pains in her stomach. She is chronically constipated, vomits frequently and has choking spells on lying down. She complains of insomnia, severe pains at back of the neck, in her throat, her legs and over the xiphoid. She is excessively nervous, despondent and low-spirited at times. Her appetite is poor. She complains of "crawling sensations" under the skin.

Examination.—A rather florid woman, 5 feet 3 inches tall, weighing at present 175 pounds. Four years ago she weighed 104 pounds. Examination of head shows nothing. Bilaterally, just above the clavicles are adipose masses, standing out prominently, soft to the touch and painful on pressure. These are ovoid in shape and are about 5 by 9 cm. and 4 by 5 cm. respectively. They do not pit on pressure. A very painful mass is found at about the level of the last cervical vertebræ. This is flat and not as soft as the others. There is another over the xiphoid, and others are found in the axillæ. The upper arms are covered with a thick layer of subcutaneous fat, and the breasts are quite pendulous. The mass over the xiphoid is very painful on pressure, and the patient is conscious of its presence all the time. Careful auscultation and percussion by myself and Dr. G. Wilson show no dulness in the upper thorax, and the heart sounds appear normal. The reflexes are normal. There are small areas of hyperesthesia on both arms and in the region of the neck. The lower abdominal region protrudes, forming an almost hemispherical mass, exceedingly hard, dull on percussion over the whole area. An apron of fairly solid tissue extends in U-shape in front, extending at its lowest point to below the level of the symphysis. Masses of fat in the gluteal region are pendulous. Another mass is present over the sacrum. The thighs and legs are small. There are no lumps. The ankles are slightly edematous. Although the face is florid, with numerous small dilated arterioles, the rest of the skin is fairly soft and white. There are no isolated or general areas of perspiration. The outline of the stomach cannot be made out. Neither spleen nor kidneys can be located. Hands, feet and face are normal, no fat masses. Examination of stomach contents (double test meal) shows no free hydrochloric acid and a total acidity of 30, some mucus, no lactic acid, no Oppler-Boas bacilli. Urine and blood examination negative. Hemoglobin 85 per cent. Blood-pressure 165 mm. 24 hours urine 1275 c. c.

CASE 2.—(Dispensary No. 21,202. May, 1910).—*Patient.*—Mrs. D., aged 42, married, housewife; daughter of Patient 1, height 5 feet 3½ inches; weight 167 pounds (previous weight 100 pounds, a gain of 67 pounds in one and a half years). Diagnosis, adiposis dolorosa, with gastric symptoms.

Previous History.—The patient had the usual diseases of childhood and has had pneumonia four times. She has one child 21 years old. "She was badly torn and had no doctor when her child was born." She has always menstruated every three weeks; she denies any miscarriages. She came to see me because of vomiting spells which started about a year ago. These have become of late almost a daily occurrence. She has severe headaches and menstruation is very painful. She has pains in the back of her neck and pains in the legs and thighs. She feels cold all the time, and wears heavy clothing even in summer. She seldom perspires; her skin is yellowish. She has worn a pessary for a long time, and has a retroflexed uterus and a very weak perineum. Nursing her mother when she was

3. Osler: Practice of Medicine, 1909.

paralyzed was a great strain on her, and her mother's present state of health is another burden.

Examination.—Stomach contents show free hydrochloric acid absent, total acidity 30, but no apparent atonic condition; some mucus, no lactic acid or Oppler-Boas bacilli. The bowels move every day without aid. The reflexes are normal; the pupils react to light and accommodation. Head, thoracic and abdominal examinations negative. There is one large, soft lipomatous mass over the left collar bone and a smaller one (9 by 5 cm.) on the opposite side, standing out clearly. These are painful and do not pit on pressure. A mass at the back of the neck is extremely sensitive to touch and pressure. The patient has the sensation of some live moving thing in the occipital region. She exhibits in a less marked degree, however, the same neurotic symptoms first observed in her mother. Examinations of blood and urine show nothing. Blood-pressure 140 mm. Hg; hemoglobin 80 per cent.

CONCLUSIONS [4]

If a diathesis existed in the daughter, and nervous strain is considered of etiologic importance, worry over her mother's ill health may have some bearing on her present condition. She took complete charge of her mother during the two paralytic attacks. Then it appears that the birth of her child caused extensive trauma, which is considered by some as of importance.

Most insistent but guarded questioning failed to elicit any past luetic history, in both cases, any miscarriages or any knowledge of a family history of epilepsy or goiter. Alcoholic excess can safely be excluded here as a possible causative factor. Four attacks of pneumonia and diphtheria in the mother, also the two later paralytic attacks, are to be considered.

These two cases are mild, but the symptoms are marked, much more so in the mother, however. In Case 2 the disease has occurred before the menopause. (One case in a patient as young as 12 years of age is on record.) The two hemiplegic attacks occurring in Case 1 would suggest a sclerotic condition not found present in the peripheral vessels.

Although there was a marked increase in weight in both cases, it does not appear in Case 1 to be the adiposity which Marburg found at autopsy to be associated in his case with a tumor of the pineal gland. I cannot account reasonably for the two attacks arising from a general pituitary involvement. In neither case does the thyroid exhibit macroscopic changes. The masses in the older woman are not nodular, but are firmer and less sensitive than in Case 2.

The gastritis, which was real in both cases, with age and poor mastication as predisposing factors, responded to treatment (lavage, diet, strychnin sulphate, etc.). The blood-pressure is high in both cases.

The asthenia, the gastric disturbances, areas of hyperesthesia, and the frequent attacks of melancholia, with the physical findings, convince me that we are dealing with true adiposis dolorosa.

Surgical aid has been attempted.

In one case the removal of the breasts and later a mass from the axillæ was followed, for a time at least, by cessation of the distressing local symptoms.

Most observers agree that thyroid extract is a benefit in some cases. Price has seen five patients out of seven distinctly benefited by its use. The present knowledge of the pituitary is too limited to make its use of therapeutic value. Salicylates and bromids are of use. Massage of a gentle nature is advocated by some and a properly regulated exercise and diet should be insisted on in all cases.

Most patients are obese; the heart often requires attention. The agencies suggested are of doubtful permanent benefit and until the etiologic factors causing this distressing pathologic condition, with the accompanying neurosis and psychic disturbances so markedly illustrated in most cases are discovered, we are working more or less in the dark. It is a satisfaction to know, however, that one positive cure has been brought about by the use of thyroid extract.[5] In all, about 50 cases have been reported.

NOTE. (Sept. 21, 1910).—Patient 1 has lost weight (19 pounds in four months) is less nervous, and in a better general state of health than formerly. The "lumps" have not decreased in size, but are not so sensitive as before thyroid extract treatment was instituted.

Patient 2 shows no improvement after four months' treatment, except that lavage, diet, etc., have bettered the gastric distress. She has gained in weight. The "lumps" are as sensitive or painful as before treatment began.

4. For a comprehensive review and detailed description of symptoms, see Frankenheimer, J. B.: Adiposis Dolorosa, THE JOURNAL A. M. A., March 28, 1908, p. 1012.

5. Price (Am. Jour. Med. Sc., May, 1909) cites the report of Dercum on this point.

ANAPHYLACTIA

A PHENOMENON CAUSED BY THE PROTEINS OF TOMATOES, CRABS, BERRIES, BIVALVES, EGGS AND OTHER FOODS. A PRELIMINARY NOTE

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Without discussing, in this brief paper, the so-called "serum-disease" of von Pirquet, and other phenomena of anaphylaxis described elsewhere, such as the anaphylactic attacks in hay-fever, after tuberculin and the like, I wish to make this preliminary report with regard to another anaphylactic disease.

When some foreign protein is first injected into, or invades, man or other animal, it makes him susceptible to a subsequent injection of the same substance. There is no outward or tangible manifestation of this first injection, but the sensitizing effect is distinctly noticeable when the injection is repeated.

This second injection may show itself as a violent shock, or in the form of respiratory disturbances, dyspnea, edema, tonic muscular spasms, joint effusions, glandular swellings, albuminuria, hyperemias, or urticarial skin eruptions. Any one of these signs, or many of them, may be observed after the second dose of protein.

The causes of the various urticarial diseases are usually classified as predisposing, external, and internal. The predisposing causes have been called "susceptibility," "indigestion," "infancy," "rickets," "jaundice," etc.

Nettles, jelly-fish, mosquitoes, wasps, caterpillars and "bugs" are among the external causes.

Internal causes are foods such as mussels, crabs, lobsters, berries, worms, mushrooms, oatmeal, tomatoes, pork, or even egg-white.

The curative treatment is to remove the offending dietetic irritant.

Now, it is my assumption that certain individuals are sensitized to tomatoes, grapes, berries, or other specific protein, and that the absorption of their particular protein from the food brings on an attack. Since in

certain cases in which antitoxic horse-serum is repeated in a second dose all of these urticarial eruptions, even angioneurotic edema, have been at various times reported, there is every reason to believe that these rashes are signs of anaphylaxis.

One individual may pass through different degrees of prophylaxis (immunity) alternately with states of anaphylaxis. Thus a tomato may at one time cause no symptoms, at another time in the same indivjdual, erythema multiforme; again angioneurotic edema.

Accordingly, those persons subject to urticarial eruptions from a definite food may be regarded as sensitized to that protein. If the proteins absorbed from the digestive tube inaugurate an attack, they are in a state of anaphylaxis.

These phenomena of hypersusceptibility to food proteins may be congenital, acquired or inherited.

The recognition of the offending protein, whether its invasion is by mouth or by injection, whether it is by the olfactory route or by the circulation direct, is of such clinical importance that internists dare no longer ignore the applications of our present knowledge of anaphylaxis.

There is another example of the clinical application of this anaphylactic reaction which I must mention before concluding this paper. It has never been recognized before. In all of the dermatologic clinics of seacoast or river towns there is seen, in the crabbing season an erythematous, progressive cellulitis of the hands, due to abrasions from the shells of crabs, lobsters and other shell fish. Hundreds of persons are scratched, injured and "bitten" by crabs, yet only about one-tenth of one per cent. of those bitten show this erysipeloid eruption. It spreads from the point of the finger or hand scratched, steadily, just like its more dangerous analogue, erysipelas.

Dr. T. Caspar Gilchrist studied a number of these cases bacteriologically and found them sterile. There was no associated micro-organism. "Crab-hand" has been a mystery, as far as its immediate etiology is concerned.

When we realize that such a small number of those exposed to this shell reaction really exhibit it, and when all of the other factors associated are taken into consideration, I believe it will be agreed that the condition fits in exactly with what we should expect from those persons who are supersensitive to shell proteins. Two experiments that I had the opportunity of performing this summer go far to verify this. They, with others, will be published in another paper.

It is always a specific condition. Persons subject to anaphylactic shock from crabs are not affected by berries, and *vice versa*.

A further study of this new disease is yet to be completed. We are now isolating the proteins of various dietetic articles and administering them to susceptible persons. The complete results of this work will shortly be published.

1937 Madison Avenue.

Benefits of Anesthesia.—Without a reliable anesthetic where would our surgeons be? We would hear nothing of the wonderful work they are doing. They would be groping in the dark and performing only the minor work—opening boils and an occasional amputation. But to-day, thanks to a drug that robs the patient both of the sense of pain and consciousness, the surgeon unhesitatingly dares to attack the most vital parts of the body.—W. A. Onderdonk, in *American Practitioner and News*.

THE SURGICAL IMPORTANCE OF ACCESSORY RENAL ARTERIES*

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DAVID C. STRAUSS, M.D.
CHICAGO

Under normal conditions each kidney is supplied by a single renal artery which arises from the side of the aorta, a little below the origin of the superior mesenteric. Each renal artery, before reaching the hilum of the kidney which it supplies, divides into from three to five branches, which enter the substance of the kidney independently at the hilum.

The primitive kidney is a segmental organ, and its primitive vessels are probably segmental, *i. e.*, one artery for each segment, so that the persistence of the embryonic condition would mean that each kidney, instead of being supplied by a single renal artery, might receive from two to five renal arteries. Such supernumerary vessels represent a primitive condition, and the accessory arteries may arise close together from the aorta, or their points of origin may be widely separated.

The varieties of accessory arteries which most frequently occur are:

TYPE 1 (Fig. 1).—Two separate renal arteries arise from the side of the aorta to supply the kidney. The two arteries enter

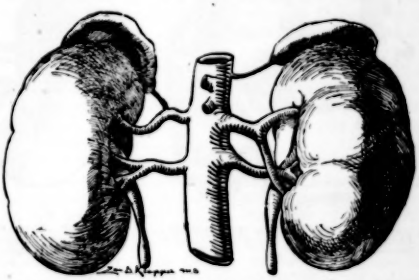

Fig. 1.—Type 1 of accessory arteries. Two separate renal arteries passing to hilum from aorta.

the hilum of the kidney, dividing, just before doing so, into two or more branches. This variety may be called the *two-artery type*.

TYPE 2 (Fig. 2).—A main renal artery arises from the aorta in the normal manner, but a second, *i. e.*, accessory, artery arises from the aorta a variable distance away, passing directly from the aorta to the upper pole of the kidney. This may be called the *superior polar type*.

TYPE 3 (Fig. 3).—The main renal artery arises from the side of the aorta and passes to the hilum in the normal manner. An accessory renal artery arising separately from the aorta a variable distance from the main trunk passes to the lower pole of the kidney. This is called the *inferior polar type*.

TYPE 4 (Fig. 4).—Three renal arteries arise from the side of the aorta and pass separately to the hilum of the kidney. This is called the *three-artery type*.

TYPE 5.—Four renal arteries arise from the aorta and pass separately to the hilum. This is called the *four-artery type*.

TYPE 6 (Fig. 5).—The accessory artery, instead of having its origin from the aorta, close to the main renal trunk, arises from a vessel at times quite distant from the normal renal artery, most often from the common, external or internal iliacs, rarely from the hepatic, middle sacral, spermatics, in-

*Read at the annual meeting of the American Urological Association, St. Louis, June, 1910.

ferior phrenic, lumbar or even pancreatic or colonic arteries. This may be called the *extra-aortic accessory type*, and is quite rare as compared with the previously described types.

Type 7.—Superior or inferior polar branches arise from a single, *i. e.*, normal, renal artery just before it divides to enter the kidney.

These vessels may be called *pseudo, or false accessory, i. e.*, not arising from the aorta. They are of less importance than the true accessory vessels.

Although anatomists have known for many years that such accessory arteries are frequently found, their surgical importance is just beginning to be appreciated. Surgeons have become aware of the fact that accessory renal arteries may not only be the cause of pathologic conditions, *e. g.*, hydronephrosis, but that they may play an important part in producing serious, if not fatal, complications during or after operations on the kidney, such as nephrotomy or nephrectomy. But few books on anatomy in any language, and scarcely a single treatise on general or renal surgery mention the possibility of the presence of such accessory arteries.

The majority of anatomies, such as those of Hyrtl, Henle, Partsch, Sobotta, Poirier and Charpey, Broesike, Lernow, Bardeleben, Joessel, Deaver, Morris, Gerrish, Testut and Langer, either do not mention the occurrence of accessory renal arteries or state that they are of no practical importance.

In the standard atlases, like those of Henke, Bardeleben, Zuckerkandl, Spalteholz, Toldt, Sobotta, and Heitzmann, no illustrations of such an anomaly are shown.

Cunningham, Quain, Gray and Piersol describe the occurrence of accessory arteries, Quain stating that they are found in 20 per cent. of bodies. The best description is that given by Piersol:

> Accessory renal branches may arise from the abdominal aorta or from the middle sacral, common iliac, internal iliac or the inferior mesenteric. These accessory arteries frequently enter the substance of the kidney elsewhere than at the hilum.

The only reference to these accessory vessels in the books on renal or general surgery are in Schede's chapter in the von Bergmann "System," and in Garrès, Israel's and Albarran's books. Schede says that variations of the renal artery may be of surgical importance and that search should be made for separate vessels entering the upper or lower poles. Preliminary ligation of these accessory arteries is advised.

Garrè simply mentions the presence of double or triple renal arteries and advises ligation of an accessory artery passing to the upper pole, when found during a nephrotomy. He calls attention to the fact that hemorrhage after nephrotomy may be due to such accessory vessels.

Israel does not describe any variations of the renal artery, but refers to the rôle which an accessory artery to the lower pole may play in the production of hydronephrosis. In the chapter on nephrolithotomy he refers to the fact that persistent bleeding may be due to accessory polar arteries, which have either not been compressed during a nephrotomy, or from which postoperative bleeding occurs after the heart has regained its activity. He describes a case in which there was an insignificant hemorrhage from the upper pole during a nephrolithotomy, even after a rubber ligature had been placed around the pedicle. After the patient's return to bed a severe hemorrhage occurred, whose source was found at the upper pole, necessitating nephrectomy.

At the 1909 meeting of the French Surgical Association, Pasteau reported a case in which a severe hemorrhage occurred after a nephrectomy, due to overlooking an upper pole artery. He found anomalous arteries in 20 per cent. of eighty-two cases. In one case there were six renal arteries.

The polar arteries are often mistaken for adhesions, and are thus easily torn.

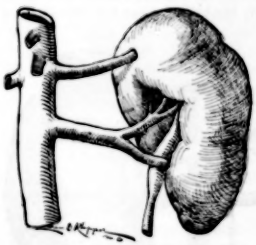

Fig. 2.—Type 2 of accessory arteries. Large artery passes from aorta to upper pole of kidney.

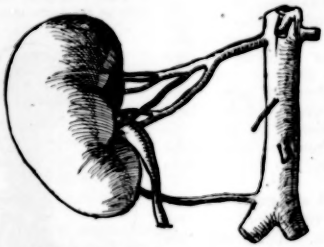

Fig. 3.—Type 3 of accessory arteries. Large artery passes from aorta, close to bifurcation, to lower pole.

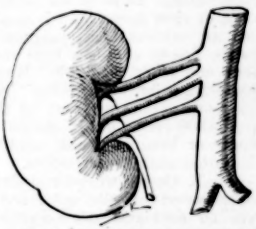

Fig. 4.—Type 4 of accessory arteries. Three separate arteries pass from aorta to hilum of kidney.

The only articles which give any accurate information as to the frequency of occurrence of the different anomalies are those of Brewer, Thomson and Seldowitsch, which will be referred to in connection with our own work.

We became interested in the subject of accessory renal arteries after having had a case of very severe postoperative hemorrhage from an overlooked inferior polar artery following a nephrolithotomy. The bleeding occurred after the patient's return to bed, as in Israel's case.

Believing that a knowledge of the frequent occurrence of accessory renal arteries should be more general, we desire to add our observations as to their frequency to those of Brewer, Seldowitsch and Thomson. During the past winter, through the kindness of Dr Bensley of the University of Chicago, Dr. Ransom of Northwestern University, and Dr. White of the University of Illinois, we dissected the kidneys in 100 cadavers, *i. e.*, 200 kidneys, and made the following observations as to the frequency of occurrence of accessory renal arteries:

TABLE 1.—ACCESSORY RENAL ARTERIES

Number of kidneys examined	200
Accessory arteries (true), (See Figs. 1 to 5 incl.) (Types 1, 2, 3, 5 and 6)	28
Superior polar arteries from the single renal (pseudo-accessory, Type 7)	19
Percentage of true accessory arteries	14
Percentage of normal renal arteries	86

TABLE 2.—TYPES OF TRUE ACCESSORY ARTERIES

Type 1.—Two separate arteries from the aorta to hilus	14
(a) right, 7; (b) left, 5; (c) both sides, 2.	
Type 2.—Inferior polar artery from the aorta	7
(a) right, 4; (b) left, 2; (c) both sides, 1.	
Type 3.—Superior polar artery from the aorta	5
(a) right, 2; (b) left, 3.	
Type 4.—Three renals from aorta	0
Type 5.—Four renals from aorta	1
Type 6.—Accessory from iliac (common or external or internal)	1
Type 7.—Superior polar artery from a single renal artery	19
(a) right, 8; (b) left, 5; (c) both sides, 6.	

TABLE 3.—PERCENTAGE OF NORMAL AND ACCESSORY RENAL ARTERIES

Observers.	Kidneys Examined. Number of	Normal Arteries, Percentage.	Accessory Arteries, Percentage.	Two Renals, Percentage.	Superior Polar, Percentage.	Inferior Polar, Percentage.	Three or More Renals, Percentage.	Common Iliac Accessory. Percentage.
Thomson	419	74.4	25.6	7.6	6.9	4	4	0.9
Brewer	302	71.9	28.1	22	†	†	6.1	..
Seldowitsch	300*	82	18	12	1.3	2.7	2	..
Eisendrath & Strauss	200	86	14	7	3.5	2.5	0.5	0.5

* Only male cadavers. † Not mentioned.

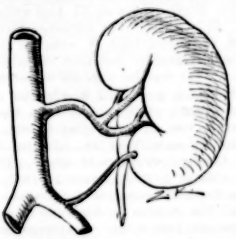

Fig. 5.—Type 6 of accessory arteries. The accessory artery has its origin from an extra-aortic artery, like the common or external iliacs.

A comparison of these statistics shows that abnormal, *i. e.*, accessory, arteries occurred in about 21 per cent. of over 1,200 kidneys. In other words, one can expect to find such accessory vessels in about one out of five kidneys. The most common form of accessory vessel is a second renal artery arising separately from the aorta, as shown in Figure 1. Next in order of frequency are the superior polar, the inferior polar and the remaining types shown in Figures 2 to 5.

This question of the presence of supernumerary renal arteries is not only of interest from an anatomical standpoint, but will be of constantly growing importance in its bearing on renal surgery.

Israel, Ekehorn, Mayo and Braasch have called attention to the rôle which an accessory artery passing from the aorta to the lower pole of the kidney may play in the production of hydronephrosis through kinking of the ureter across such an accessory vessel.

The purpose of our investigations was to direct attention especially to the possibility of severe hemorrhage occurring from such accessory vessels, either during the performance of nephrolithotomy or after the patient has returned to bed. No doubt many cases of serious and in some cases fatal hemorrhage have been due to bleeding from such accessory vessels, especially those passing to the upper or lower poles. In future it would be advisable, before incising a kidney for the removal of renal calculi or performing a nephrectomy for any condition, to examine the upper and lower poles and the hilum of the kidney for the presence of any supernumerary arteries. If such vessels are found, it is advisable to ligate them separately from the main renal pedicle.

So far as our investigations show, the condition is present as often on one side as on the other.

103 State Street.

GANGRENE OF THE LUNG WITH TRICHOMONAS INTESTINALIS AS THE ONLY APPARENT ETIOLOGIC FACTOR

REPORT OF A CASE

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The literature in relation to the trichomonas is rather extensive, but relates to the intestinal, urinary and vaginal tracts almost entirely. Observers have noted it in connection with chronic diarrhea, cystitis without bacteria, and rarely with pulmonary abscess and gangrene.

Instances of the invasion of the respiratory tract by mastigophora are very few, so that the report of a case of gangrene of the lung in which the trichomonas was the only discoverable etiologic factor may find a place in the rather scanty records of pulmonary disease due to or associated with this protozoon.

The general consensus of opinion seems to be that the trichomonas is not capable of producing disease *de novo*, but that a previous injury to the tissues must have taken place, and that in such cases only can it play an active part in pathogenesis.

This is the evidence in the report of the following case:

History.—The family, personal and social histories present nothing pertinent to the case of the patient, Private E. C. He had had chills and fever in July, 1909. On June 21, 1910, he was admitted to the post hospital with the same trouble, diagnosed and treated as tertian malaria, and was discharged as cured July 3, 1910. In the winter of 1909-10 he injured the left side of his chest by falling on the pommel of his saddle while mounting his horse and was confined to the hospital for a week.

Present Illness.—July 10, 1910, the injured side began to give him trouble under severe drill, and two days later he began to have a great deal of pain in the left side, and felt sluggish. He also had headache and dull ache over the root of the left lung, which continued throughout the illness. On admission, July 15, 1910, besides the pain, he felt weak and was expectorating blood-tinged sputum.

Examination.—Temperature was 101.8 F., respirations 20 and pulse 80 per minute. There was an area or dulness between the left anterior and posterior axillary lines extending from the third to the fifth rib. Coarse bubbling râles were heard throughout the left chest; otherwise the physical signs were negative. The blood, urine and feces were normal; the latter contained no parasites. The sputum was thin at first, white, with blood-streaks, later much increased in quantity, dark, rusty, prune-juice color and foul odor. It contained elastic tissue, masses of epithelial cells, Charcot-Leyden and hematin crystals. Besides a few bacteria, there were numerous actively motile trichomonades.

During the first twenty-four hours the sputum amounted to but 1 fluid ounce or so, but during the course of the disease it increased to between 3 and 4 fluid ounces per day. During the last week of the disease the amount of sputum gradually lessened, the foul odor disappeared and the quantity of blood in it was reduced until there were only a few cor-

puscles present. In every examination numerous active trichomonades were noted until the last week of the disease, during which they gradually decreased in number and lost their motility. There were still a few present in the sputum on the day of the patient's discharge (August 5, 1910) from the hospital. At no time were there more than a few bacteria present in the sputum.

Course of the Disease.—At no time during the patient's confinement in the hospital did the temperature rise above normal after the first twenty-four hours, but ranged between 97.6 and 98.5 F. The pulse and respiration were normal throughout. The sputum and pain in the side and over the root of the left lung were the only noteworthy symptoms, and on discharge (August 5, 1910) only a slight soreness over the root of the lung remained, the foul and bloody sputum and the pain having quite disappeared. The patient has reported twice since discharged, at intervals of a week, for observation, and at the last visit seemed to be in perfect health.

THE NON-OVIPAROUS FEMALE HOOKWORM*

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In every higher animal we recognize certain more or less definite periods of physiologic activity, and we roughly divide the span of life into three stages, which are in no way sharply outlined. These we call the stages of youth, adolescence, and old age. Youth, characterized by a high degree of vitality, is the period of rapid cell multiplication and growth; organs are formed and perfected, functions are unimpaired and active, and the body is a perfect living thing. The second period is characterized by functional and sexual maturity; the multiplication of tissue cells is less rapid; the organs strengthen and their functions are more perfectly correlated; growth comes to an end. In the perfected animal it is a period for perpetuation of the race, and in conformity with this great function sexual differentiation is fully established. The third period, old age, brings a marked change, the potential of vitality wanes; degenerations of all kinds appear, and cumulative weakness ends natural death. These three periods are all characteristic of all of the higher-celled animals, the last period being rarely seen in nature, because in the wild animals a violent death follows the early functional weakening and inability to fight off enemies (Calkins).

Do we find the same sequence of physiologic changes in the lower many-celled animals, and can we distinguish periods of youth, maturity and old age? Since the fundamental biologic laws are much the same, on *a priori* grounds alone we should expect to find the same series of changes in the lower metazoa and likewise in the protozoa.

Of late I have been greatly interested in the study in the development of the *Uncinaria americana* with special reference to the non-oviparous female, endeavoring to ascertain whether their inability to produce eggs is due to the "old age period" or to other influences not attributable to senile degeneracy. It is affirmed by Bass that more than 7 per cent. of females out of the 247 dissected by him failed to produce ova. He maintains that during the latter third of their existence they cease to lay eggs. This observation, if substantiated, is of paramount importance for the reason that individuals may be harboring the worm though no ova can be found in their stools.

The limited amount of work that I have done along this line does not correlate with the result of Bass's investigations, as shown from the examinations of specimens obtained from cases coming from the Tennessee Industrial School. At this juncture I wish to express my deep indebtedness to Dr. Thomas Weaver, the physician in charge, for the privilege of studying these cases. Children are brought here from practically every county in the state and are kept under surveillance until they have attained their majority. So far as we could ascertain, there is no evidence that the disease has ever been contracted in the institution. Ground-itch, dew-poison, etc., are unknown among them and the water-supply is perfectly pure. This offers a fruitful field of research for ascertaining just how long the infection may have persisted in a given case and likewise in determining the oviparous and non-oviparous females, with especial reference to their ages. The report in detail follows:

Case 1.—L. D., a girl, aged 17, admitted March 8, 1899, from Putnam County; eleven years in the institution without interruption; two treatments by thymol (on Feb. 15, 1910, and March 18, 1910) recovered 27 hookworms—22 females and 5 males; all of the females contained many eggs.

Case 2.—M. G., a girl, aged 18, admitted from Rutherford County; thymol treatment recovered 19 hookworms—13 females, 6 males. The females were all oviparous.

Case 3.—M. C., a girl, aged 9, admitted May 27, 1905, from Overton County. Only 1 hookworm recovered by thymol. This worm was an egg-bearing female.

Case 4.—R. S., male, aged 18, admitted Feb. 12, 1904, from Pickett County; six years in school. Three courses of thymol given (March 4, 1910; March 11, 1910, and March 17, 1910). Forty-five hookworms—36 females and 9 males—were recovered. All the females contained many eggs, except one. This non-oviparous female was of average size and, so far as could be ascertained macroscopically, was perfectly normal. Microscopically, the vulva was abnormally situated just in front of the lower two-thirds of the body. The two uterine and ovarian tubes were observed to be quite atrophic, and very much shorter than normal.

Case 5.—D. C., a boy, aged 13, admitted May 13, 1909, from Blount County. Thymol treatment recovered 18 hookworms—13 females and 5 males. All the females were oviparous.

Case 6.—F. M., a boy, aged 16, admitted July 13, 1909, from Davidson County. Thymol treatment recovered only 1 oviparous female.

Case 7.—W. D., a boy, aged 12, admitted Jan. 1, 1910, from Cannon County. Thymol treatment revealed only 1 oviparous female.

Case 8.—F. C., a boy, aged 16, admitted Feb. 10, 1910, from Scott County. Thymol treatment recovered 3 oviparous females.

Case 9.—K. B., a girl, aged 9, admitted July 1, 1908, from Macon County. Thymol treatment recovered 2 oviparous females and 1 male.

Case 10.—B. J., a boy, aged 14, admitted Jan. 25, 1909, from Greene County. Thymol treatment recovered 2 oviparous females and 1 male.

Case 11.—L. M., a girl, aged 13, admitted Dec. 28, 1907, from Lawrence County. Thymol treatment recovered 7 oviparous females and 4 males.

SUMMARY

In summarizing the above cases it will be seen that 132 worms were recovered and examined—101 females and 31 males. Only one non-oviparous female was ob-

* From the Pathological Laboratory of Vanderbilt University, Medical Department.

served out of the entire number. The patient from whom the non-oviparous female was obtained has been in the institution for six years (Case 4). We can assume that the worms recovered from this patient are over six years of age, since there has been no evidence of infection while in the institution. Of absorbing interest is Case 1, possibly the longest infected case on record, Dr. Stiles (personal communication) related two cases in which the infection lasted about eleven years. Our patient has been constantly present at the institution for over eleven years and no outside source of infection was possible.

It is generally conceded that the average infection will last three or four years; the worms die or become dislodged from their firm attachment and are then passed out by the bowel. Two thymol treatments in Case 1 dislodged 27 hookworms—22 females and 5 males. Every female contained enormous numbers of ova. It is evident from the above case that the worms are more than eleven years old. Notwithstanding their extreme age they appear to be producing as many eggs as in the prime of life. This case, however, cannot be taken as a criterion, since it may be an exception rather than the rule.

About two years ago I recovered 89 worms from a patient giving a history of having had the disease a little more than one year. Recently I examined these worms and found 66 to be females and 23 males. Three of the 66 females proved to be non-oviparous. The history of the case follows:

CASE 12.—A boy, 12 years old, had always lived in Massachusetts except for the past year and a half. He had always been healthy and energetic. The family moved from Massachusetts to South Carolina in the early spring of 1907. During the summer the boy went barefooted and contracted ground-itch on two different occasions. Several months later he appeared not to be as well as usual, and throughout the winter months he exhibited a marked lack of energy, lassitude, and stood very poorly in his classes at school. Anemia was present, but was not very marked. In June, 1908, the family moved to Atlanta, and came to Nashville in November, 1908. The case came under my observation several weeks later. Examination of the blood showed red cells 4,115,000, hemoglobin 85; whites, 9,200. The differential leukocyte count revealed 17 per cent. of eosinophils. The increase in eosinophils led me to suspect uncinariasis, so the stools were examined, with the result that a great many hookworm ova were found. Thymol was given, which expelled 67 worms, 53 of which were females and 14 males.

One week later, another course of thymol was given, with the result that 19 worms were obtained—10 females and 9 males. Two weeks later, another course of thymol was given, which expelled 3 females. After this, repeated examinations of the stools failed to show the ova. The patient rapidly improved, and three months after the last treatment, was as healthy and robust as he had always been before the infection.

The unique feature in this case was the finding of three non-oviparous females out of 66 worms, which gave a history of being less than one and one-half years old. From this case it is evident that comparatively young females may be incapable of egg production.

I am of the opinion that the non-oviparous nature of the female is not entirely due to the "old-age period," but is, in all probability, caused by some defects in development, or occasioned by peculiarity in a given strain. Definite conclusions, however, are not warranted, as evidenced by the paucity of the material at hand. Further observations by the writer along this line will be forthcoming in the near future.

CULTIVATION OF ADULT TISSUES AND ORGANS OUTSIDE OF THE BODY*

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NEW YORK

The solution of many problems of human pathology depends, in a large measure, on the finding of the still unknown physiologic laws of generation, growth and evolution of cells. We must, therefore, develop new methods which permit the discovery of these laws. A few weeks ago, we began to investigate systematically one of these future methods, namely, the cultivation of adult tissues outside of the body. The starting point of our researches was the beautiful work of Harrison on the embryonic tissues of the frog. Some years ago, Harrison observed the development of nerves from the central nervous system of frog embryos cultivated in a drop of lymph. In 1910, Burrows studying with Harrison improved very much this method and adapted it to embryonal tissues of warm-blooded animals. He succeeded in cultivating nerves and mesenchymatous cells of sixty-hour chick embryos.

Then, at the Rockefeller Institute, we tried to develop on this basis a general method which would be applicable to the adult tissues of the mammalia and thus to determine some of the laws of cellular physiology.

The experiments on which we wish to report now were performed on dogs and cats and an adult frog and consisted of extirpating small fragments of tissues of an animal, inoculating it aseptically into a plasmatic medium taken from the same animal, and sealing the materials in hollow glass slides. The slides were placed in an incubator, maintained at a constant temperature of 37 C. The microscope was also placed in a special thermostat which was kept at this temperature. The growth of the cells could, therefore, be observed, over a period of time, with the microscope, kept itself at the body temperature, and the multiplication of cells directly seen.

GENERAL CHARACTERS OF THE GROWTH

The plasmatic media were inoculated with many tissues or organs, of which all were found to multiply or grow. The cultures of the different tissues—as we shall call them—contain common characteristics. The time of the beginning of cellular proliferation depends on the nature of the tissue, the age of the animal and other more or less important factors. In the cultivation of glandular organs of adult dogs, the vegetation starts after thirty-six or forty-eight hours. But, if the young animal is only a few days old, new cells appear in the culture after ten or twelve hours. Four or five days after the inoculation of the medium, the cultures of thyroid, kidney, suprarenal, etc., are in full activity, and remain in this condition as long as the medium allows it. Tissues like cartilage or peritoneum grow, at first, very slowly. After three days, there are in the cultures very few new cells. But about one week after the inoculation, the cultures become very much more active, and are in full vegetation after about nine or ten days. There is also some analogies between the morphologic characters of the cultures of various tissues

*From the Laboratories of the Rockefeller Institute for Medical Research.

and organs. For all tissues, the first indication of growth is the appearance on the edges or the surface of the specimen of a few small and regular granulations. These granulations consist of the cytoplasm of cells, the nucleus and nucleoli of which soon become visible. The cells belong to two general types, spindle and polygonal. The spindle cells appear ordinarily at first and their morphology is about the same in all tissues, bone marrow or kidney, thyroid or cartilage. They are long and slender and radiate from the fragment of tissue or organ through the plasmatic medium. They are derived probably from the connective tissue framework of the organ. At the same time, or a little later, the cells of the second type appear. They are polygonal or multipolar cells in form, but their morphology varies widely according to each tissue and organ. They seem in part to be differentiated cells of epithelial nature. Cartilage produces cartilaginous cells, and thyroid generates cells which look like thyroid cells. Even in the renal cultures, this second type of cells congregates in tubular formations. By using a suitable technic, we can control the growth of one or another of these types. A small fragment of thyroid cleanly cut produces mainly spindle cells, while in tissues more finely divided (scrapings), epithelial-like cells appear.

In the first part of the work we found and studied the growth of adult tissues outside of the body. In the second part we attempted to cultivate thyroid cells in series, and also to activate the growth of a tissue by passage from one plasmatic medium to another. Connective tissue, cartilage, peritoneum, bone marrow and bone, skin, thyroid gland, spleen, suprarenal gland, kidney, ovary and lymph gland, were all cultivated successfully.

CULTIVATION OF TISSUES

Arterial Sheath.—Three days after inoculation of a fragment of arterial sheath, very delicate palm-like cells appeared on the edge of the tissue and ramified through the plasmatic medium in long filaments ending in spindle cells. Vegetation was very weak and stopped entirely after a few days.

Connective Tissue.—Most of the cultures of connective tissue remained inactive.

Conjugal Cartilage.—This started also to grow on the third day. For about one week, very few spindle and spider like cells were found slowly wandering along the edges of the cartilage. From the upper pole of the fragment of tissue, a mass of new cartilage protruded and invaded the plasmatic medium. After a few days, it became so large that it could be seen by the naked eye. Progressively, the rate of growth became faster. Many irregular cells with long arms now appeared in the plasma about the old cartilage.

After nine days, the culture was in full activity, and the old cartilage had thus generated outside of the body a piece of new cartilage two millimeters long.

Peritoneal Endothelium.—This underwent also a slow evolution. For several days, there were only a few beautiful and irregularly-shaped cells along the edges of the tissue. After a week they began to multiply more actively and many very large cells resembling endothelial cells slowly moving through the clear plasmatic medium were directly observed under the microscope. On the twelfth day, the culture was still in full vegetation.

Bone.—During the first hours of the cultivation of fragments of bone marrow and bone, the anatomic elements began to wander away from the tissue. After three or four days, the little pieces of bone hidden in the bone marrow became visible, because almost all the cells had invaded the plasmatic medium. Around the tissue, there were radiating spindle cells and many red blood corpuscles. Leukocytes with active ameboid motion and large cells with granular cytoplasm and long pseudopodia had reached the remotest part of the medium. A few large spindle cells were seen crawling along the edges of the fragments of bone.

Epidermis.—We studied the growth of epidermis by cultivating fragments of the skin of an adult frog. Masses of epithelial cells appeared on the edges of the cutaneous fragments after twelve or twenty-four hours. They grew very rapidly. After forty-eight hours, the area of new epidermis obtained in some cultures was twice larger than the old fragment of skin. A few cultures were fixed and stained, and it could be seen that many cells were dividing by karyokinesis.

CULTIVATION OF ORGANS

Thyroid, Spleen, Etc.—Many cultures of glandular organs were made and grew rapidly. The cultivation of the thyroid of adult dogs was very easy. After thirty-six or forty-eight hours, long fusiform cells protruded at one or several points from the edges of the tissue. Often new polygonal cells also could be seen on the upper surface or on the edges of the thyroid. After the fifth and the sixth days, the cultures were generally in full and sometimes wild vegetation, which lasted as long as the plasmatic medium was in good condition. A great many long fusiform cells or chains of fusiform cells radiated from the tissue through the plasma. Polygonal cells were generally closer to the tissue. In a few cultures there was an abundant proliferation of cells resembling epithelial cells, while the fusiform cells were in small number.

The cultivation of suprarenal and of spleen gave also excellent results.

Kidney.—But very much more important were the results of the cultivation of the kidney. Two plasmatic media were inoculated with small fragments of a kidney of a young cat. Twelve hours later, fusiform cells were protruding from the tissue. After twenty-four hours, a great many cells had invaded the plasma all about the renal substance. One day later, the cultures vegetated wildly. On the fifth day, one of the cultures was fixed and stained with hematoxylin. We saw many karyokinetic figures in the cells which had proliferated through the plasma. A tube had begun to grow from the tissue into the medium. The cells showed a condition of great activity.

The other culture was allowed to live to the sixth day and an exceedingly active growth of the cells took place. In the morning, we observed a few tubes growing from the renal substance into the plasma. In the evening, they were very much longer and curved at their blind ends. At the beginning of the seventh day, the culture was fixed and stained. Around the renal tissue a very large number of fusiform and polygonal cells had formed. A few tubes, composed of a lumen limited by epithelial-like cells, had passed from the fragment of kidney for a distance into the plasmatic medium. They had the appearance of renal tubules.

These experiments demonstrate that adult tissues grow very easily outside of the body. Tissues like cartilage, and even like renal substance, can be caused to develop in something like normal manner under entirely new conditions.

REACTIVATION AND CULTIVATION IN SERIES

The second part of our study consisted of modifying the rate of growth of tissues by passing them into a second medium. A few six and seven day old cultures of thyroid were used for the first series of experiments. The thyroid fragments were removed from the old cultures, cut into small pieces and placed into new plasma. Eleven and twelve hours after, new cells protruded from the previously inactive parts of the thyroid substance, as well as from the newly proliferated cells. We found, indeed, that the thyroid of an adult animal had now become as active as the thyroid of an animal a few days old. Afterward the cells invaded very quickly the new plasmatic medium. One of the cultures was fixed a little less than thirty-six hours after the passage into the new plasma and stained with hematoxylin. From one side of the old tissue there was a large mass of fusiform cells radiating through the plasma. From another point, several tubular formations had wandered far into the medium. The wall of these tubules was composed of epithelial-like cells. It seems, therefore, that the passage from one medium into another of the same kind increases the vegetative power of the thyroid cells.

In a second series of experiments, a plasmatic medium was inoculated with cells produced by the cultivation of a thyroid fragment, in order to obtain a second generation of cells. In several instances, this result was achieved. After twenty-four hours, we noted that a few cells had wandered from the old plasma into the new. In one experiment, less than four hours after the inoculation, the new plasmatic medium already contained new cells. One of these cells was fusiform and its activity was so great that we could follow under the microscope the motion of its cytoplasmic gravitations and the changes of its shape. In a few minutes, one end of the cell became very large, while a long tail grew at the opposite end. Finally the cell became multipolar. Other cells appeared at the same time in the new medium. Thirty-six hours later, the culture was fixed and stained and many active cells resembling epithelial and connective tissue cells were found to be present in the new plasma. We had, therefore, obtained a second generation of the first culture of thyroid cells.

CONCLUSION

The main results of these observations can be summarized in a few words: Adult tissues and organs of mammals can be cultivated outside of the animal body.

The cultivation of normal cells would appear to be no more difficult than the cultivation of many microbes. It remains, however, to be determined whether continuous series of cultures can be secured. This method can, therefore, be used for the study of many important problems. For instance, it may render possible the cultivation of certain micro-organisms in conjunction with living tissue cells or alone in plasmatic media. Then it will be of great value in the study of the problem of cancer. We have already succeeded in inoculating a plasmatic medium with sarcoma of the fowl; cells appeared in the surrounding plasma after nine hours and the culture is growing actively at present. We can assume, therefore, that the perfection of the method of cultivating adult tissues of mammals outside of the body will be helpful in the exploration of unknown fields of human pathology.

Work is in progress along the lines indicated, the results of which will be published from time to time.

Therapeutics

DIET IN TYPHOID FEVER

As typhoid fever has its most active pathology in the intestinal canal, and as all ordinary food must traverse this canal, and as in this almost invariably protracted fever nutrition is a matter of serious consideration, the character of the food given in this fever is always a live subject for discussion.

While this subject has been several times touched on in this department, the last word has not yet been said, as evidenced by the repeated discussion of the subject, both in medical journals and in medical societies.

Whether we have under-fed our typhoid patients or over-fed them, it seems that the evidence is very strong that milk alone is not the proper food for these patients. In fact, when we consider the frequent difficulty in its digestion, the large amount of it that must be given to satisfy the system either in calories or in protein, it would seem that we should rule against it as a typhoid diet. These facts immediately cause the decision that our old feeding of typhoid fever was wrong, and that we must select a new or modified food in this disease.

It can not be questioned that the high temperature, rapid pulse, delirium, and that association of nervous symptoms called typhoid are not caused by the typhoid germ alone, but by a double infection, and the double or secondary infection is due to toxins or the products of secondary germs absorbed from the intestines.

Tympanites is an indication not of typhoid fever, but of intestinal putrefaction and fermentation, and a mistake in the management of the bowels and of the food administered. Tympanites need not be a symptom of typhoid fever, and when it is present it is almost invariably a medical mistake. It is too easily a demonstrable fact to require anything more than the assertion that, if the abdomen is flat and not distended, if the bowels have properly moved, and if there is no troublesome diarrhea or obstinate constipation, then the tongue is less coated and is not dry, the temperature is less, the skin is moist, the pulse is better, the delirium is less or generally absent, and such symptoms as carphology and subsultus are absent. The temperature being lower than with such added bowel infection, there is less necessity for disturbing the patient with cold water antipyretic measures, and the less such disturbance the quieter the nervous system and the less loss of nutrition, to say nothing of the less irritation of the heart from rapidity caused by the exercise and nervous excitement due to cold applications.

It stands to reason, then, that primarily such food and arrangement of the movements of the bowels as cause the least tympanites and the least indigestion are of first importance in the management of typhoid fever. Secondly, the food which, so far as possible, satisfies the requirements of the body for nutrition and at the same time satisfies the above requirements of easy and thorough digestion, should be the food of choice.

It must always be considered, of course, that during the fever term there will be a progressive loss of weight, in other words, a denutrition. It is probably impossible to prevent this by any amount or any character of the food, as before sufficient nutriment could be absorbed to prevent loss of weight such indigestion would be caused as to preclude its administration. As it is impossible to determine exactly how much of all of the different elements of food the patient can absorb just inside of his limit of perfect digestion, we must have

a scheme or plan of nutriment that theoretically should be satisfactory to all these typhoid patients, and then individualize this plan to each patient. If we always keep inside of gastric indigestion and prevent tympanites, we are immediately reducing the ordinary fatality of typhoid fever by at least half. In other words, the nervous wear and tear is not so great and the danger of intestinal hemorrhage and perforation are reduced to a minimum.

Before considering the diet in detail, the intestinal condition should be considered, both theoretically and practically. Inflammation of any part of the intestines can not occur without causing increased secretion, increased peristalsis, and more or less diarrhea the character of which will depend on the part of the intestine in which the inflammation is located. There will always be an increased amount of mucus secreted, possibly blood-streaked; and there may actually be a sufficient number of white cells, either alive or dead, in the bowel movements to be termed pus. If there is irritation enough at any one point, irregular peristalsis may occur and pain be present. If there is irritation enough to cause a spastic condition of some part of the bowel, intestinal gas will accumulate above this part, and more pain and distention occurs. If either normally digested refuse products or products of excretion or undigested food reaches the inflamed part, it is more or less retained there by the abnormally adhesive exudate on the mucous membrane, or retained by abnormal and irregular peristalsis, and fermentation, if not actual putrefaction, occurs, with increased intestinal pressure aiding and abetting in the absorption of the toxins produced.

From all these facts, then, and they are facts, Nature's method of removing the undigested food and the products of inflammation by diarrhea should receive our encouragement and not our opposition. It is true that Nature is working just as faithfully for the pathogenic germs as she is for the patient who harbors them; consequently, we can not absolutely trust Nature to cure the patient, but we could not interfere with the natural measures taken by the patient's metabolism itself to get rid of his infection. Neither should we leave it all to Nature's doubtful processes. In other words, the diarrhea should be managed, but constipation neither allowed nor caused in typhoid fever.

The patient, then, should receive at first a cathartic, either calomel or castor oil, and then after the intestinal canal is clean, he should every other day have a dose of the laxative found best in his particular case. Whether the laxative to cause one or two good movements every other day be a vegetable (generally best) or a gentle saline (sometimes best), is a matter of unimportance. If the laxative tends to cause a diarrhea or several movements, a 1/10 grain morphin tablet should be administered after the second movement. This will inhibit peristalsis and cause no other symptoms. The laxative being given every other day, on the intermediate or alternate day a simple rectal injection of 15 c.c. (half an ounce) of glycerin and an equal amount of water should be given. This will cause an evacuation of the lower bowel and expulsion of gas.

Such a management of the bowels will keep the lower part of the small intestine as clean as possible, will prevent the fretty tire and discomfort of a diarrhea, will give rest enough for the intestinal ulcers to heal, and will prevent the stagnation of putrid products, which cause, besides the general symptoms above described, deeper ulceration into the inflamed glands.

A discussion of bowel antiseptics in typhoid fever will be found in THE JOURNAL, Oct. 12, 1907, page 1293. Hexamethylenamin, having been proved so harmless and yet so useful a drug, should, perhaps, in small amount, be given constantly during typhoid fever, on the theory that, even if it does not cause any antiseptic action in the bowels, it will prevent the typhoid and colon bacilli from infecting the gall-bladder and the typhoid bacillus from becoming lodged in the kidneys, to say nothing of its ability to inhibit the growth of germs on various serous membranes of the body.

The pendulum has swung from insufficient nutriment through an excessive amount of milk feeding in typhoid to the other limit of a large amount of protein and actual solid food, and now is again swinging, very slowly, however, back to a diet arranged according to food values and to the actual needs of the body. To study the diet from this standpoint it is well to review an article on this subject by Dr. Harris A. Houghton, of Bayside, L. I. (*Am. Jour. Med. Sc.*, January, 1910). Shaffer (THE JOURNAL, Sept. 19, 1908, p. 974) two years ago showed that typhoid patients did not receive within 50 per cent. of the kind of food they required, viz., heat-producing and tissue-saving food or calories, while they did receive more nitrogenous food than they required.

Houghton reviews various physiologic experiments which show that during the fever process the glandular secretions of the digestive tract are more or less insufficient. Even the salivary secretion is less than normal, and may even become acid. This is one of the causes of the dry mouth, coated tongue and sordes, and is an indication for the slight salivary stimulation afforded by lemonade and orange juice. The hydrochloric acid of the stomach is greatly diminished, and it is still further decreased in amount if sodium chlorid is not given with the food. The absence of sodium chlorid from the diet was another long-continued mistake during the milk-feeding period of typhoid fever. The bile is also decreased, and, although there is no experimental evidence to show a diminution of the pancreatic secretion or the secretion of the intestinal mucous membrane, it is safe to infer that these are also diminished. In other words, it has been estimated that the ability to digest food is decreased from 10 to 12 per cent. in the typhoid patient. Hence, as the absorptive toxins are more serious in protein maldigestion than in starch maldigestion, the deduction seems rational that too much protein should certainly not be administered.

Houghton recalls to mind that Chittenden and others have proved that an increased amount of nitrogen with protein indigestion does not ordinarily add nutrition or strength to the system, but is represented by an increased output of nitrogen products in the urine, the body taking up and utilizing but a small part of the nitrogen ingested. This is certainly just as true of a typhoid patient, and, while part of his nitrogen metabolism will be passed in the feces, a large part must pass in the urine, and will enter, on account of his maldigestion, into irritating and even more or less toxic nitrogen compounds before being excreted by the urine. It would therefore seem a sensible deduction to give the typhoid patient just sufficient nitrogen for his needs as it could be approximately estimated and not an excessive amount to his harm. From this same reasoning, as soon as convalescence is established and the patient begins to put on nutrition, he must of necessity need more nitrogen, i. e., more protein. If a mistaken, ill-judged amount of protein food, carrying with it a large amount of nitrogen,

is forced on a patient who is severely ill, and at the same time an insufficient amount of carbohydrate food is given, a careful quantitative and qualitative analysis of the twenty-four hours' urine excreted will show that abnormal urinary products are the result, especially the ammonia compounds, indican and other irritants, and doubtless not only the symptoms present, but actual death may be caused by these toxins, not dissimilar to a uremic death. In other words, such feeding is vicious.

As has been above urged, Houghton reminds us that a large amount of bacterial decomposition is caused by overfeeding of protein, and the obverse is true, viz., that if the protein is limited the bowel fermentation is diminished and the danger from typhoid is reduced. Another effect of the absorption of undesired nitrogen compounds is irritation of the blood-vessels sufficient to cause vasomotor constriction. This constriction of the surface vessels during fever is undesirable, as it prevents radiation and perspiration, and the skin becomes dry and hot and the temperature is increased. If the patient receives an extra amount of protein and an insufficient amount of carbohydrate, starch, etc., during the fever, the increased amount of ammonia compounds excreted by the urine, as just stated, due to maldigestion, may develop an acidosis of the system or a diminished alkalinity of the blood, and again we have an unnecessary death.

It has been shown that during fever the glycogen of the liver is diminished, and if starch foods are not administered it may entirely disappear from the liver, all the glycogen appearing in the muscles. This is suggested by Houghton as probably to represent a need of the cells for combustible material; again, another indication for food that will readily form glycogen. It is also, and has been, a well-known fact that the part of the body that burns first in protracted fever is the fat, and the more fat the patient has, other conditions being equal, the longer will probably his muscular tissue or solid tissue be protected. Also, in the absence of carbohydrate food his body fat will burn to such acid products as diacetic and beta-oxybutyric acids and to acetones, with the result of causing acidosis and death if the food is not corrected. Hence it is wise to conserve this fatty tissue by protecting it, and to prevent acidosis, by the administration of such foods (fats and starches) as will furnish material for the fever process, even though it is probably impossible for the patient, under the conditions, to deposit new fat. In other words, he needs more calories than he has been receiving.

Houghton suggests as a possible cause of a final condition of shock or vasomotor dilatation which so often occurs as a final in typhoid fever, failure of the adrenal glands. The shock condition in ptomain poisoning from absorption of depressent toxins, and the similar condition of surgical shock after abdominal operation in which the sympathetic abdominal plexuses are often of necessity injured, seem to show that absorption, especially of toxins produced by nitrogen decomposition, probably can inhibit the activity of the adrenal glands and cause just the condition of shock which we often see. This is one more reason for preventing this kind of toxemia, viz., that from an excessive amount of protein ingestion in typhoid fever.

While it is well known that glycogen and sugar (in other words, products that burn) can be metabolized from pure protein, as evidenced in true diabetes mellitus, it is certainly a disadvantage to the system to be compelled (and especially during a fever) to make its glycogen and sugar out of protein stuff. Therefore it seems self-evident that starch should be a large part of the typhoid patient's diet, with the addition of sugar.

The ideal estimated diet of a typhoid patient should therefore be a small amount of protein, enough to represent, if possible, his daily nitrogen loss which will persist throughout the fever but has not been proved to be a cause of final dissolution; as much carbohydrate as he can comfortably digest without the production of flatulence, given in the form best suited to the individual patient; a little sugar, cane sugar, or, perhaps better, milk sugar, for his glycogen need; sodium chlorid sufficient for his hydrochloric acid need; possibly a few drops (not more than five) of dilute hydrochloric acid three or four times in twenty-four hours after a feeding that carries with it protein. The patient should also receive some fat, perhaps best in the form of a little buttered toast or a little cream, whichever it is found he best digests. The amount of water he receives should be sufficient, and it should be enough to cause him to pass at least a quart of urine in twenty-four hours, and better a larger amount.

Houghton suggests a diet and presents it in table form with the amounts of protein, fat, carbohydrate and calories appended. For an adult of ordinary size and weight the following represents his suggestions: His feeding intervals are two hours apart, from 6 a. m. to 8 p. m. (Three-hour intervals are better, perhaps, with longer intervals during the night.) At 6 a. m. he suggests a cup of coffee with 2 heaping teaspoonfuls of sugar and a desertspoonful of cream, and a choice of 2 thin slices of toast, a breakfast biscuit or zwiebach. At 8 a. m. he would give 2 heaping tablespoonfuls of cream of wheat gruel, with a handful of oyster crackers. At 10 a. m. he gives 8 ounces of vegetable soup. At 12 noon he allows a small baked potato mashed and made tasty with a tablespoonful of cream and a piece of butter the size of a domino, 2 thin slices of toast, hot weak tea with 2 heaping teaspoonfuls of sugar. At 2 p. m. he gives 2 tablespoonfuls of tapioca pudding and a handful of oyster crackers. At 4 p. m. he gives rice seasoned with 2 heaping teaspoonfuls of sugar and another domino of butter. At 6 p. m. he gives 2 thin slices of toast, more butter and a heaping teaspoonful of sugar; at 8 p. m., 8 ounces of vegetable soup, with more oyster crackers.

The vegetable soup above mentioned is prepared as follows: "Two ounces each of green or canned French peas, white dry beans, potato, rice, and noodles, and a half ounce of carrot are boiled in water at least four hours. Enough water should be added to make a quart, which would be sufficient for four feedings. The whole yields 760 calories, of which 6.3 per cent. is protein, fat less than 0.2 per cent., and 43.9 per cent. is carbohydrate. When ready to use stir up sediment and allow the patient to eat all (including noodles) with the exception of the pea and bean skins."

Houghton urges that the patient should be fed with a spoon, and that the food should remain in the mouth as long as convenient. He would give water between the feedings, and not with the meals. He recommends the increase of nutriment (probably meaning protein) as soon as convalescence is established. At the height of the fever, if these foods are distasteful or if the patient cannot eat the full quantity, he would substitute milk sugar in considerable amount.

As this diet recommended by Houghton does not contain iron, a patient on such diet should receive a sugar of iron (*Eisenzucker*) tablet, each 3 grains, 2 or 3 times in 24 hours, or 3 or 4 drops of the tincture of the chlorid of iron, in fresh lemonade, 3 or 4 times in 24 hours.

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[*For other information see second page following reading matter*]

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FOREIGN BODIES IN THE HEART

The traditional conception of the heart as the seat of the vital spark and the home of the soul still flavors our thoughts enough to cause interest in those occasional cases in which even considerable injuries to this organ have failed to lead to sudden or even remote catastrophe. And this feeling persists in spite of the growing experience of the surgeons that operative attacks on the heart are entirely feasible, and the common procedure in laboratory work of drawing a few cubic centimeters of blood from the heart of guinea-pigs whenever desired, the last operation being equivalent to tapping a human heart with a large caliber trocar and withdrawing one or two pints of blood. As regards the effect of wounds on the heart, the determining feature is less how much injury than where and how it takes place. Large secondary tumor growths may be found unexpectedly within the heart at necropsy, having produced no effect to indicate their presence, while small gummas in the vicinity of the bundle of His give rise to profound disturbances in function. So, too, with wounds of the heart, oblique penetrating wounds in the thick walls of the ventricles may not leak because closed by the systolic contraction, while wounds in the auricles usually cause fatal hemorrhage, and wounds in the pathways of conductivity are frequently instantaneously fatal.

Perhaps the most spectacular of pathologic conditions in the heart are those in which foreign bodies persist in the heart for long periods without causing manifest harm. This condition has been observed most frequently in cattle, which sometimes take nails, needles and similar pointed objects in their food; these articles may migrate from the stomach or esophagus into the pericardium, and sometimes into the heart itself. Galen knew of a deer which lived for a long time with the point of an arrow in its heart, and Weber, in 1600, describes the finding of an encapsulated bullet in the wall of the heart of a deer. In man such a condition has not been observed so often, but Zesas[1] recently collected and classified reports of 118 cases, which number, of course, represents far less than the actually known cases. The number is rapidly increasing of late, especially through the use of the *x*-ray, which now sometimes discloses as located harmlessly in the heart a bullet whose whereabouts would otherwise never have been suspected. Increased frequency of necropsies also adds to the number of cases, for occasionally a foreign body is thus found in the heart as a necropsy surprise, as in the case described by Koch, who found a large nail in the entirely healed heart of a man who died from an absolutely unrelated condition. Of the 118 foreign bodies found, described by Zesas, 54 were needles and 38 were bullets, all the other objects being of diverse nature, with but two or three of each sort having been found. From the predominance of needles as foreign bodies in human hearts, and of nails, needles and pins in bovine hearts, it is evident that such pointed articles do tend to migrate from the point of entrance, however conflicting the experimental evidence on this point may be. Bullets, however, sometimes reach the heart most indirectly by way of the blood-stream, there being several instances in which the missiles have entered large vessels, especially the pulmonary veins, and from here have passed by gravity or by the force of the current into the heart. There are also a few striking cases in which bullets entering the heart have after a time escaped into the arterial system and caused embolism of most unusual character.

It would seem that an aseptic foreign body within the heart wall usually causes little disturbance, but if it is within the cavities there may be considerable arhythmia and cardiac irritability until fibrinous deposits have immobilized and encapsulated it. In one case a bullet in the heart wall caused no trouble for three weeks, then it penetrated into the ventricle, where it could be seen by radioscopy tossing about violently and causing most violent arhythmia, until it became stationary after six months. Evidently, then, operative interference will seldom be indicated when it is found by radioscopy that a bullet or other foreign body has lodged in the heart, unless infection is feared or pericardial hematoma is present. The possibilities of cardiac surgery in such cases are shown by the case of the patient operated on by v. Manteuffel, in which, after the wound of entrance on the anterior surface of the right ventricle had been sutured, the bullet was removed from the cavity of the same ventricle through an incision in the posterior wall, recovery being uneventful.

1. Zesas, D. G.: Fortschr. d. Med., 1910, xxviii, 649. Briefly abstracted in THE JOURNAL, July 23, 1910, p. 358.

ERRORS IN DIAGNOSIS AS REVEALED AT AUTOPSY

The interesting and instructive oration of Cabot which appears in this issue, deserves some comment because of its possible misinterpretation by medical students and by younger practitioners. A general discussion of 1,000 cases in a brief time requires the omission of much detail which would greatly alter the general effect of the paper, though not the absolute figures.

In every large general hospital a considerable proportion of the cases which ultimately reach the autopsy table are under observation for too brief a time to permit of any thorough study; and, what is more important, the patients reach the hospital already moribund and in such condition that any except the most superficial examination is impossible. Under such circumstances, many errors of diagnosis are made and, as a matter of fact, are quite immaterial. The duty of the physician at such a time is often that of easing the last hours rather than that of making a diagnosis.

Much more important, however, is the fact that while Cabot divides the errors into those of omission and those of commission, he fails to point out that there are very great differences between these two groups of errors. The percentage of errors of omission is determined only by the care of the pathologist. Few bodies are examined after death without showing conditions which were not suspected during life, and it is hardly probable that the science and art of diagnosis will ever reach so high a plane that errors will not be common. Most of the mistakes of this nature are immaterial, so far as the patient is concerned, for they would not usually in any way affect the treatment which the patient received during life.

A summarization of Cabot's table shows 1,535 cases: *i. e.*, many of the 1,000 individual autopsies are included more than once, and there are 602 errors of omission. In the absence of details, it may be admitted that some of these errors are material, but in many cases they are merely defects in anatomic diagnosis. It is, for example, unimportant that in a case of valvular disease of the heart some one or more of the defects are unrecognized clinically. The fact that in a given case the patient has a double mitral lesion instead of the single mitral lesion recognized during life, would in no way affect the treatment. We would not be understood as discrediting every effort at anatomic accuracy in diagnosis, but let us keep distinct in our minds that which is material and that which is not. For example, such a condition as acute pericarditis was overlooked in no less than 38 of 54 cases. It is probable that the great majority of instances of pericarditis occurred in the course of acute pneumonia or acute sepsis with endocarditis, both being such severe diseases, accompanied by such prominent thoracic changes, that an intercurrent acute pericarditis would be easily overlooked even though sought for. In truth such an omission is, from the patient's standpoint, of no consequence at all.

No less than 64 per cent. of the cases of bronchopneumonia were undiscovered clinically; but again lack of detail does not enable one to infer in how many of these cases the area involved was too small to permit of clinical recognition, or in how many of them the bronchopneumonia was a terminal incident in the course of some such affection as apoplexy, uremic coma, typhoid fever or carcinoma.

In contrast with the 602 errors of omission are 126 of commission. In a general way, errors of this sort are of greater importance and are more difficult of explanation although many of these also are easily understood.

The paper is one of great interest, but it may give an erroneous impression which could be avoided only by the inclusion of detail which of course the author did not attempt to give.

A SUPREME COURT OF SCIENCE AND ITS RELATION TO VACCINATION

In view of the fact that many of the issues which divide the country into opposing camps have a basis in some problem coming properly within the scope of scientific investigation, Prof. J. Pease Norton[1] of Yale University suggests that it would be well if we had under government auspices a court of technical experts to decide such issues. He proposes that the cases in question should be argued by legal counsel before a jury of scientists, who should be capable of differentiating between traditional scientific knowledge and scientific knowledge based on evidence.

It so happens that the particular case which Professor Norton uses as his illustration, and the one with which he seems most deeply concerned, is that of vaccination versus antivaccination. Surely nothing could be more satisfactory to the medical profession than to have the evidence of both the efficacy and the imperative necessity of universal vaccination marshaled *en masse* against the trivial claims of those who, unable to weigh the value of evidence, have earnestly, and in most instances with honest good-will, sought to deprive human society of its only effective guard against one of its most hideous adversaries.

Professor Norton himself seems to consider the matter as essentially a financial one, for he says: "Before such a court of science all interested parties could appear with experts; on the one side the virus manufacturers, the physicians, and those public health officials who believe in the practice, and on the other side the taxpayers and the people represented by the government"; and again, "the virus makers and the physicians are not the only interests which are interested in vaccinating the people for something."

Disregarding these insinuations, which seem to bear a *New York Heraldic* device, we would call the attention of the New Haven professor to the fact that this particular problem has long since, and repeatedly, been tried in the court of science, and before just such a jury as he must approve, consisting, as it does, of those scientists who are best fitted for the weighing of the evidence in a case involving disease and human health. Surely he must know that the juries of experts on infectious diseases and immunity, epidemiology and public

1. Popular Science Monthly, October, 1910.

health, have always, and practically without a dissenting voice, decided the case in favor of universal, repeated and, where lack of understanding requires it, compulsory vaccination.

Current Comment

COLLEGE ENTRANCE EXAMINATION BOARD'S 1910 REPORT

The tenth annual report of the secretary of the College Entrance Examination Board,[1] recently issued, contains considerable data of interest to those who are trying to solve the problem of entrance examinations to medical colleges. This board was established a decade ago by a number of the leading colleges and universities to conduct entrance examinations, and its policies are controlled by those institutions, now twenty-nine in number. The magnitude of the board's work is shown by the fact that this year 45 college-trained examiners were appointed to frame the questions used at the examination held June 20-25, 1910, and 140 readers were required to grade the papers of the 3,731 students examined. These students represented 785 different secondary schools and sought admission to 70 different colleges and universities, 26 of which have medical departments. The extent of this board's work geographically is shown by the fact that examinations were held this year in 165 different cities and in 40 states, beside Hawaii, Canada, and 4 European countries. In the last five years the board has examined 15,927 students representing 1,688 different high schools, academies and colleges. By the passing of this board's examinations admission may be secured to almost any standard university in the country. The question may fairly be asked: Would it not be advisable for medical colleges to refer to this board for examination all students who do not hold diplomas from accredited high schools? Such action would do away with much of the confusion of tests which at present are employed and would at the same time furnish a sufficient guarantee that the student actually has the equivalent of a four-year high-school education.

TESTIMONIALS

There never was a "patent medicine" firm that did not claim that it had "thousands of unsolicited testimonials," and that "lack of space" was its only reason for not publishing more endorsements of its product. As a matter of fact the testimonial does not come as easily as these claims indicate. To get most of them requires some effort and at least a small expense. The gift of a dozen pictures to the individual who will testify to belief in the curative power of the nostrum is not much, to be sure, yet it is sufficient to make the adjective "unsolicited" an untruth. The fact is, the majority of "patent medicine" testimonials are far from being "unsolicited," as there are men who make a business—and a well-paying one—of getting such endorsements. They do so big a business that it becomes necessary for them to hire men to gather the material; the employer furnishes the information—or "leads," as it is technically called—regarding the persons to be approached and the preparation for which the testimonial is needed. During the past week the following "classified" advertisement has appeared several times in at least one Chicago newspaper under "Male Help Wanted":

> MEDICAL TESTIMONIAL GATHERERS—Experienced; leads furnished; give references. Address O 355, Tribune.

It would be interesting to learn the name of the concern which requires the services of the "medical testimonial gatherers," and it would be still more to the point to know what nostrums were to get the benefit of the "unsolicited" endorsements thus obtained.

ARSENIC IN PERNICIOUS ANEMIA

The action of arsenic in pernicious anemia is often so favorable as to suggest that it is a specific remedy for this disease. The results for a time are remarkable, and if the observation were terminated when the patient was at his best a cure would undoubtedly be frequently reported. If the remedy in use were some new synthetic a cure would certainly be advertised with great *éclat* without waiting for the final result. Without doubt, there are many cases of pernicious anemia in which arsenic has produced such an apparent cure, which physicians have not put on record because the praise of an official remedy does not afford a sufficient stimulus and because knowledge of the clinical history of the disease leads them to expect a relapse, which usually, but perhaps not always, happens. A case which is reported in this issue[1] is of interest because of this marked improvement referred to and because the author recognized the temporary character of the improvement.

THE FLUELESS GAS HEATER

As a means of warming a room there are few things more pernicious, from a hygienic standpoint, than those oil or gas heating apparatus which are used without a flue pipe to carry off the products of combustion. They not only vitiate the air directly by consuming the oxygen and replacing it with noxious gases, but indirectly they put a premium on insufficient ventilation by making it practically imperative that the windows and doors be shut in order to accomplish the object attained—that of raising the temperature of the room in which they are used. In view of the obvious objections to this form of household heating apparatus, therefore, an advertisement by a gas company which has recently appeared in most of the Chicago papers is much to be deplored. This advertisement sets forth the virtues of a "gas heater" which we are told "needs no flue pipe... it consumes less oxygen than one person and really *purifies the air* by burning dust and germs." Whether the promulgation of such dangerous untruths as these is due to ignorance on the part of the public service corporation which disseminates them or to the unfettered imagination of its writer of advertising copy, makes little difference. It should be stopped.

1. Substation 84, New York City.

1. THE JOURNAL A. M. A., Oct. 15, 1910, p. 1372.

REVISION OF THE PHARMACOPEIA

Last week[1] we commended the action of the National Confederation of State Medical Examining and Licensing Boards, in suggesting a list of commonly used drugs as subjects of examination in materia medica and therapeutics. We suggest that this action should receive the attention of the Committee on Revision of the Pharmacopeia, which will have the responsible task of deciding the scope of the forthcoming Pharmacopeia. Although no one would contend that the United States Pharmacopeia should be restricted to the list referred to, there can be no question that considerable restriction and weeding-out are desirable. The adoption or rejection of the broad principle of wise restriction will determine whether the United States Pharmacopeia is to be a book of scientific materia medica or merely a book of pharmaceutical formulas and standards; or, in other words, whether the United States Pharmacopeia will be revised in the interest of medicine or in the interest of medicines.

THE INFLUENCE OF CALCIUM ON AMEBOID MOVEMENT AND ON PHAGOCYTOSIS

Recent investigations of the influence that various factors may have on phagocytosis have revealed that certain substances under suitable conditions may stimulate phagocytosis. Thus Hamburger and Hekma[2] found that small amounts of calcium are able to promote phagocytosis considerably by action on the leukocytes, and Eggers[3] has shown that magnesium has a similar effect. These results were obtained from experiments with phagocytic mixtures outside the body; more recently Hamburger[4] reports that minute quantities of calcium increase the activity of leukocytes in the living body as well. He placed under the skin capillary tubes containing bacterial cultures with and without calcium and then compared the lengths of the columns of leukocytes which entered the tubes; he also injected physiologic salt solutions with and without calcium into the intestinal canal and measured the columns of leukocytes attracted into capillary tubes containing bacteria and inserted under the skin of animals so treated. In both of these sets of experiments the results clearly indicated that the calcium increased the leukocytic immigration into the tubes; special experiments showed further that the calcium also stimulated phagocytic action. These effects were obtained not only with physiologic salt solution containing calcium chlorid, but also with a mineral water which contains a large amount of calcium; if a quantity of this water containing 0.06 gram of calcium was injected daily into the intestines of rabbits the number of leukocytes entering the tubes increased about 40 per cent. above that observed in untreated animals. It is possible that this biochemical property of calcium may prove of great interest from the therapeutic point of view.

1. THE JOURNAL A. M. A., Oct. 8, 1910, p. 1292.
2. Biochem. Ztschr., 1908, ix, 275.
3. Jour. Infec. Dis., 1909, vi, 662.
4. Proc. Roy. Acad. of Sc., in Amsterdam, June 23, 1910.

Medical News

ILLINOIS

Quarantine Hospital for Moline.—Plans have been formulated by Dr. August H. Arp, health commissioner of Moline for a new isolation hospital to be built immediately in the rear of the Moline City Hospital. The building will be of brick and two stories in height.

The Glidden Hospital.—The DeKalb City Medical Society has selected property just south of the city limits for the Glidden Hospital, for which James F. Glidden left a bequest of $25,000.——The late Col. Isaac L. Elwood, DeKalb, in his will, made provision for the payment of $25,000 to the institution.

Cases Dismissed.—The trial of Dr. William Hecker, Watseka, at Portage, Wis., charged with being responsible for the drowning of his wife at Fox Lake in August, was concluded, October 7, by the dismissal of the case.——In the case of Dr. Thomas D. Doan, Scottville, charged with an attempt to produce abortion, the jury returned a verdict of not guilty.

Personal.—Dr. Sidney G. Pratt, Buda, who has been ill for a year, has recovered and resumed practice.——Dr. Annie B. M. Alguire, Belvidere, who was operated on at the Presbyterian Hospital, Chicago, September 3, is reported to be doing well.——Dr. Karl F. Snyder, Freeport, suffered a compound fracture of the right arm while cranking his automobile, October 1.——Dr. and Mrs. Daniel B. Bobb, Dakota, celebrated their golden wedding anniversary, October 7.——Dr. Ralph E. Niedringhaus, Granite City, a member of the State Board of Health, was seriously injured in Granite City, September 28, in a collision between his buggy and an ambulance. ——Dr. and Mrs. Harry H. Whitten, Peoria, left for Europe October 14.——Dr. Robert S. Denney has been appointed local surgeon of the Burlington System at Aurora, vice Dr. Augustus R. Reder.——Dr. Charles F. Smith, Kankakee, was appointed president of the Big Four Railway Surgeons' Association, at its meeting held in Indianapolis, October 4.

Chicago

Personal.—Dr. and Mrs. Samuel J. Walker and family, and Dr. and Mrs. Corey H. McKenna have returned from Europe.

Unlicensed Practitioners Fined.—J. Kerasibowska, A. Nowagruska, Mrs. E. Bonanami, and George Drews, charged with practicing medicine without license, are reported to have been fined $100 each.

Charity Ball.—A charity ball is to be given at the Blackstone Hotel, October 31, under the auspices of the board of managers of the Mary Thompson Hospital, for the benefit of that institution.

Old Hospital Building Demolished.—Wreckers have commenced demolition of the old building of the Presbyterian Hospital, erected in 1883, which will be replaced by a seven-story structure, provided for in the will of the late Thomas Murdoch.

Clinical Fortnight.—A clinical symposium is announced to be held in Chicago from November 7 to 19, consisting of clinics at various hospitals from 8 a. m. to 5 p. m. on each day. Headquarters for this series of clinics are to be maintained at Hotel LaSalle, where visiting surgeons may register and receive their cards of admission to clinics. Full particulars, programs, etc., may be obtained from Dr. Franklin H. Martin, 100 State Street, Chicago. Special society meetings will also be held during the clinical fortnight.

INDIANA

Personal.—Dr. Albert May, Crothersville, was painfully injured by a fall from the window of an interurban car.——Drs. John N. Hurty, Indianapolis, and William F. King, Columbia City, of the State Board of Health, began the "Health Week Campaign" in Warsaw, October 10.

Prevention of Blindness.—At the recent meeting of the Indiana State Medical Association, a committee composed of Drs. George F. Keiper, Lafayette; John N. Hurty, Indianapolis; Thomas B. Eastman, Indianapolis, and Albert E. Bulson, Jr., Fort Wayne, and Prof. Severance Burrage, Lafayette, was appointed to inaugurate a propaganda on the prevention of ophthalmia neonatorum, to work in cooperation with a similar committee of the American Medical Association.

Requests Removal of Member of Board.—The Indiana State Medical Association, at its recent meeting, endorsed the action

of the board of councilors, through Dr. William H. Wishard, Indianapolis, chairman, requesting the removal of Dr. Solomon G. Smelser, Richmond, from the Indiana State Medical Board. Dr. Smelser is charged with incompetency and with not being a representative, in any true sense, of the high professional standing embodied by the State Medical Association.

MARYLAND

Chiari in Baltimore.—Dr. Hans Chiari, during his visit in Baltimore, was the guest of Dr. J. Whitridge Williams. Professor Chiari was accompanied by his daughter.

Contract for State Hospital Awarded.—The contract for the new building for the indigent insane at the Springfield State Hospital, Sykesville, has been awarded at an estimated cost of $30,000.

Poliomyelitis.—The State Board of Health is investigating poliomyelitis, of which eight cases have been reported during the last four months. It is believed that the disease is very prevalent in Maryland. The board is preparing an exhibit showing the causes of infant mortality, including poliomyelitis, to be presented at the meeting of the American Association for the Study and Prevention of Infant Mortality to be held in Baltimore.

Personal.—Dr. John E. Legge, Oakland, sailed for Europe October 8.——Dr. Samuel Johnston, Baltimore, who was recently operated on at the Union Protestant Infirmary for appendicitis, has recovered.——Dr. John W. Chambers, Baltimore, is suffering from an infected hand due to an operation wound.——Dr. Florence Rena Sabin, associate professor of anatomy in Johns Hopkins University, has been given the degree of D.Sc., by Smith College, Northampton, Mass.

MICHIGAN

Detroit Tuberculosis Sanitarium.—The main building of the new tuberculosis sanitarium on Twelfth Street, three blocks from the city limits, is nearly finished and two cottages are practically ready for occupancy.

New Hospital.—Dr. William McBurney's hospital, Stambaugh, is finished and opened to the public. It is a three-stories and basement structure and contains five private rooms on the second floor and a public ward on the floor above.

Work on Tuberculosis Hospital Well Under Way.—Good progress is being made on the Marquette County Tuberculosis Hospital at Morgan. Work on the building will be continued throughout the fall and winter and the institution is expected to be ready for occupancy by May 1 next.

Medical Inspection Starts in Saginaw.—Medical inspection of the East Side public schools of Saginaw has been inaugurated and the following medical inspectors have been appointed: Drs. G. Harry Ferguson, J. Neil McLean, Fred W. Edelman, H. Roy Wilson, David E. Bagshaw and John M. Campbell.

Milk Exhibit.—A milk contest was held in Detroit, September 26 and 27. President Larned of the Board of Commerce introduced the speakers, who were Health Officer Guy L. Kiefer and J. C. Weld, chief of the market milk bureau of the U. S. Department of Agriculture. Prizes were awarded and more than 1,600 persons visited the exhibit.

Personal.—Drs. Willet J. Herrington and Charles B. Morden, Bad Axe, have returned from a trip to Great Britain.——Dr. Neal L. Hoskins, Detroit, has been appointed an ad interim member of the local board of pension examining surgeons, vice Dr. John F. Bennett, deceased.——Dr. Brett Nottingham, Lansing, has been appointed a member of the State Board of Registration in Medicine.

State Medical Society Meeting.—The forty-fifth annual meeting of the Michigan State Medical Society was held in Bay City September 28 and 29, under the presidency of Dr. J. Henry Carstens, Detroit, and the following officers were elected: President, Dr. Colonel B. Burr, Flint; vice-presidents, Drs. Charles T. Southworth, Monroe, Henry Kremers, Holland, Albert B. Simonson, Calumet, and Isaac L. Spaulding, Hudson. Detroit was selected as the place of meeting for 1911.

Appropriation for Antituberculosis Society.—The city council of Hancock has appropriated $200 for maintenance in the city of a clinic for indigent sufferers from tuberculosis, and the Houghton County Antituberculosis Society is making preparations for the opening of a building for the clinic in Hancock.——The recent annual ball at Houghton realized more than $650 for the Houghton County Antituberculosis Society.

New Home for Medical Society.—The new building of the Wayne County Medical Society was occupied for the first time September 12. On this occasion Dr. Angus McLean was inaugurated and a luncheon was given to the society by the retiring president, Dr. Arthur D. Holmes.

NEW MEXICO

Sanatorium Enlarged.—Dr. Abraham G. Shortle, who has been operating a sanatorium east of Albuquerque, will build additions so as almost to double the capacity.

State Tuberculosis Society Meeting.—At the second annual meeting of the New Mexico Tuberculosis Society, held in connection with the meeting of the New Mexico Medical Society at Albuquerque, September 30, the following officers were elected: president, Dr. Francis T. B. Fest, East Las Vegas; vice-president, Dr. John W. Colbert, Albuquerque, and secretary-treasurer, Dr. LeRoy S. Peters, Silver City.

Territorial Society Meeting.—The twenty-ninth annual meeting of the New Mexico Medical Society was held in Albuquerque, September 29 to October 1, and the following officers were elected: president, Dr. Francis T. B. Fest, East Las Vegas; vice-presidents, Drs. Robert L. Bradley, Roswell, and Leroy S. Peters, Silver City, and secretary and editor of the *New Mexico Medical Journal*, Dr. George S. McLandress, Albuquerque, and member of the council, Dr. James H. Wroth, Albuquerque. The next meeting of the association will be held in Las Vegas.

NEW YORK

Medical Library Association Meets.—At the annual meeting of the Utica Medical Library Association, October 3, the following officers were elected: president, Dr. Raymond L. Baker; vice-president, Dr. Thomas C. Gifford; secretary, Dr. Angeline Martine; treasurer, Dr. John W. Rayhill, and librarian, Dr. Smith Baker.

District Medical Society Meeting.—At the annual convention of the Third District Branch of the Medical Society of the State of New York, held in Albany, October 4, Dr. Mark O'Meara, Kingston, was elected president; Dr. John B. Harvie, Troy, vice-president; Dr. Henry L. K. Shaw, Albany, secretary, and Dr. Sherwood V. Whitbeck, Hudson, treasurer. The next meeting will be held in Kingston.

Personal.—Dr. Elbert A. Palmer has resigned as secretary and manager of Dr. Strong's Saratoga Springs Sanitarium, and will open an office in New York City.——Dr. William Kemble, Kingston, had two ribs broken and sustained internal injuries in an automobile accident, October 7.——Dr. Robert G. Cook of Canandaigua has been appointed manager of the Western House of Refuge for Women.

New York City

Medical Colleges Open.—The College of Physicians and Surgeons, Columbia University, and University and Bellevue Medical College opened on September 28. Dr. William G. MacCallum delivered the opening address at the former institution, on "The Future of Medicine."

Ambulance Service for Insane.—For the first time in the history of the institution, ambulance service for handling cases in the psychopathic ward of Bellevue Hospital has been installed. Heretofore insane patients have been brought to Bellevue by patrol wagons or in private conveyances. Two trained nurses will go out with the ambulance on each call.

Personal.—Dr. Max Huhner, Dr. Abraham L. Wolbarst, and Dr. and Mrs. Henry Koplik, have returned from Europe.——Dr. Frank E. Wilson, Brooklyn, has been nominated for Congress.——Dr. Joshua M. VanCott, Brooklyn, has been appointed a member of the State Board of Charities.——Dr. Antonio Stella has been appointed a member of the commission to consider the more normal distribution of population.

Columbia Needs Hospital.—Dr. Samuel W. Lambert, dean of the College of Physicians and Surgeons, in his annual report to President Butler and the University trustees, makes an urgent plea for a hospital in connection with the college. For this purpose he wants $6,000,000 for building and endowment. He also states that the first report of research work done under the Crocker research fund will soon be ready for publication.

Cholera in New York Harbor.—On September 29 a man who had been taken from the SS. *Germania* from Marseilles and Naples three days before, died from cholera at Swinburne Island. On September 25, a man died aboard SS. *Santa Anna* and was buried at sea. This vessel is still held in quarantine and there are two suspected cases. There was another suspect

on board the Hamburg-American steamer *Moltke*. Surgeon General Wyman of the United States Public Health and Marine-Hospital Service has conferred with Dr. Alvah H. Doty and the situation is not regarded as at all serious, but it has been deemed wise to enforce a five-day quarantine on all vessels coming from infected ports, and the force of United States inspectors has been increased abroad and passengers embarking for this port will be detained for five days before embarkation. No case of cholera has been brought to this port by a cabin passenger in forty years.

Harvey Society Lectures.—The sixth course of Harvey Society Lectures under the patronage of the New York Academy of Medicine begins October 15, when Prof. Hans Chiari of the University of Strasburg, Germany, delivers a lecture on "The Significance of Pathologic Autopsies and Other Pathologic-Anatomic Investigations." The succeeding lectures are as follows:

November 5: Prof. W. E. Castle, Harvard University, "Unit Characters in Heredity."
November 19: Prof. Jacques Loeb, Rockefeller Institute for Medical Research, "The Prevention of Toxic Action of Various Agencies Through the Prevention of Oxidation in the Cell."
December 10: Prof. Harvey W. Cushing, Johns Hopkins University, "Certain Clinical Aspects of Dyspituitarism."
January 14: Prof. Arthur R. Cushny, University of London, "Therapeutics of Digitalis."
February 14: Thomas B. Osborne, Connecticut State Agricultural Experiment Station, "The Chemistry of the Proteins."
March 25: Prof. H. Gideon Wells, University of Chicago, "Calcification and Ossification."

Work at the Budget Exhibit.—At the budget exhibit of the Board of Health, which is to be open for a month, the New York milk supply has been thoroughly discussed, and Dr. Lederle has asked for 17 additional inspectors, as inspection now must be carried into six states. Dr. Herman M. Biggs has asked for $103,759 for research laboratory extension. He shows why this request should be granted. The entire cost of the research laboratory to the city was $58,850 last year. If the city was not producing its own antitoxins it would have been necessary to purchase them at a cost of $70,635, or nearly $12,000 more than the laboratory budget for the year. Dr. Walter Bensel called attention to a serious condition at the Willard Parker Hospital, where there were only fifteen physicians last year for 1,500 patients and only 169 nurses, while 38 physicians and 300 nurses were required. He also showed that Riverside Hospital and the Kingstown Avenue Hospital, Brooklyn, were inadequate. Commissioner Drummond of the Charities Department said that the department had under its care 12,000 persons, with a working force of 2,000 in addition. He said that the department was run on a basis of such rigid economy that experts called it phenomenal. He did not see how the cost could be cut down when every day the population of the department increased.

PENNSYLVANIA

Hospital Asks Funds.—The trustees of the State Hospital for the Insane at Norristown, at their annual meeting October 8, decided to recommend to the next legislature an appropriation, aggregating $290,000, aside from maintenance for building and improvements.

Personal.—Dr. John W. Goodsell, New Kensington, surgeon of the last Peary Expedition, is delivering an illustrated lecture on the trip, entitled "With Peary on the Dash to the Pole."——Dr. Jonathan C. Biddle, superintendent of the State Hospital for Injured Persons, Fountain Springs, was seriously injured in an automobile accident, October 1.

State Society Officers Elected.—At the sixtieth annual meeting of the Medical Society of the State of Pennsylvania held in Pittsburg, October 3 to 5, the following officers were elected: president, Dr. John B. Donaldson, Cannonsburg; vice-presidents, Drs. Thomas N. McKee, Kittanning; David S. Funk, Harrisburg; Luther B. Kline, Catawissa, and John S. Mabon, Pittsburg; secretary, Dr. Cyrus L. Stevens, Athens; assistant secretary, Dr. Alexander R. Craig, Philadelphia; treasurer, Dr. George W. Wagoner, Johnstown; and trustees, Drs. Isaac C. Gable, York; George G. Harman, Huntingdon; William L. Estes, South Bethlehem, and Thomas D. Davis, Pittsburg.

Philadelphia

Portrait Presented College of Physicians.—A portrait of Dr. Adam Kuhn, one of the founders and the third president of the college, the gift of Mr. C. Hartman Kuhn, was presented to the College of Physicians at its first meeting, October 5.

Death of Dr. Shoemaker.—As we go to press, the death is announced of Dr. John Veitch Shoemaker, professor of materia medica, pharmacy and therapeutics, and clinical professor of medicine and skin diseases in the Medico-Chirurgical College of Philadelphia, who died October 11, aged 58. Further notice will appear in the next issue of THE JOURNAL.

Cocain Seller Expelled.—At a meeting of the Retail Druggists' Association, held October 7, the name of Emil Greaff, who was recently convicted for the illegal sale of cocain, was stricken from the membership roll. A further resolution adopted by the association was to drop all "dope" preparations from the shelves of drug stores.

Pure Food Violators Fined.—Three firms of candy manufacturers, prosecuted by the State Dairy and Food Commission, for the alleged violation of the pure food laws, on September 26 paid fines of $62.50 each in advance of hearings before Magistrate Beaton. Each was charged with manufacturing candy containing sulphurous acid. Ten other manufacturers had hearings October 1.

Seniors Work at Phipps Institute.—The senior class of the Medical Department of the University of Pennsylvania began work in the Phipps Institute for the Prevention and Cure of Tuberculosis on October 3. Four sections of the class will visit the institute each week. There are between 200 and 400 out-patients under the care of the Phipps Institute, and part of the students' work will be visits to the sick, but much time will be spent in the laboratory under the direction of Drs. Henry R. M. Landis and Dr. Paul A. Lewis. The sociologic work will be directed by Alexander Wilson.

Personal.—Drs. Charles A. Oliver and William R. Newbold, and Dr. and Mrs. James A. Irwin have returned from Europe. ——Dr. William W. Keen is in Berlin as the American delegate to the celebration of the one-hundredth anniversary of the founding of the University of Berlin.——Dr. John A. Kolmer, assistant bacteriologist of the bureau of health, Philadelphia, has been appointed pathologist to the Philadelphia Hospital for Contagious Diseases, vice Dr. Paul G. Weston, resigned. ——Dr. DeForrest Willard, professor of orthopedic surgery in the medical school of the University of Pennsylvania, and Dr. J. William White, Barton, professor of surgery, have resigned.

Douglas Hospital Needs Funds.—The creditors of the Frederick Douglas Hospital have been sufficiently satisfied to prevent the sale of the building, but it has been announced, however, that the institution is badly in need of money to carry on its work. This hospital was founded 15 years ago by Dr. Nathan F. Mossell, for the purpose of treating persons of the negro race, opening the way for practical hospital experience to negro doctors and the establishment of a training school for negro nurses. It has treated 40,000 cases; the building it occupies was erected and equipped at a cost of $100,000, but it bears the burden of a $64,000 debt. Though the staff of physicians is composed of negroes, there is an advisory board of prominent white physicians. Among these are: Drs. S. Weir Mitchell, William W. Keen, G. H. MacKenzie, Howard F. Hansell, Charles K. Mills, James Tyson, Roland G. Curtin and John M. Baldy.

UTAH

Medical Inspection of Schools.—The Provo City Board of Education has adopted a system of medical examination for the city schools, and has appointed Dr. Ephraim G. Hughes, city physician, as medical inspector.

New Hospital Opened.—The Judge Mercy Hospital, Salt Lake City, opened to receive patients September 10. The hospital will accommodate a number of private patients and the third floor, devoted to employees of the Oregon Short Line, will accommodate fifty patients. The institution will be conducted under the supervision of the Sisters of Mercy.

State Society Meeting.—The Utah State Medical Association held its sixteenth annual meeting in Salt Lake City, October 3 and 4, and elected the following officers: president, Dr. Frederick W. Taylor, Provo; vice-presidents, Drs. Richard A. Pearse, Brigham City, William R. Tyndale, Salt Lake City, and Heber E. Robinson, American Fork; secretary, Dr. W. Brown Ewing, Salt Lake City, and treasurer, Dr. James N. Harrison, Salt Lake City.

WASHINGTON

Personal.—Dr. Frederick T. Hyde, Weston, Mass., has moved to Seattle to practice gynecology.——Dr. George K. McDowell, Spokane, has been elected president of the Southland Rubber Company.

City Hospital Staff Appointed.—Dr. James E. Crichton, commissioner of health of Seattle, announces the following staff

of the City Hospital: Chief medical inspector, Dr. Frank S. Bourns; medicine, Drs. Clarence A. Smith, Walter C. Lippincott and Herbert E. Coe; surgery, Dr. Park W. Willis; gynecology and obstetrics, Dr. Robert M. Stith; otology, laryngology and rhinology, Dr. C. Benson Wood; ophthalmology, Dr. Edmund B. Burwell; pediatrics, Dr. John B. Manning; neurology, Dr. Donald A. Nicholson, and dermatology, Dr. Louis H. Redon.

Hospital Notes.—The trustees of Noble Hospital, Seattle, have elected the following officers: president, Dr. Alfred Raymond; vice-president, Dr. Guy S. Peterkin; secretary, Dr. Louis H. Redon; treasurer, Dr. Frank T. Maxson, and superintendent and general manager, Dr. Charles S. Noble. The hospital will be located at Kilbourne and Woodland Park Avenues. The first section is to cost $20,000.——The City Hospital has been opened in Montesano by Drs. Joseph H. Fitz and Guy E. Marcy. The building contains a large ward for men, a smaller ward for women and six rooms for private use.——The question is to be agitated in Seattle of the establishment and maintenance on Puget Sound of a floating hospital similar to that which is in such successful operation in Boston.

WISCONSIN

Anonymous Gift to Hospital.—The president of the board of directors of the Kenosha Hospital Association has received a draft for $10,000 to be placed in the general fund of the hospital, with the announcement that the donor did not desire any name to be used in connection with the gift.

Women Physicians Meet.—At the annual meeting of the Wisconsin Medical Women's Association, held in Milwaukee, September 15, the following officers were elected: president, Dr. Belle P. Nair, Fort Atkinson; vice-president, Dr. Lucia Hoyer, Milwaukee; secretary, Dr. Minnie M. C. Hopkins, Oconto, and treasurer, Dr. Johanna M. Droppers, Milwaukee. The association passed a resolution authorizing the appointment of a committee to confer with the State Board of Health regarding a public educational campaign on germ carriers.

GENERAL NEWS

X-Ray Society Election.—The annual meeting of the American Roentgen-Ray Society was held in Detroit, September 28 to October 1, and the following officers were elected: Dr. Percy E. Brown, Boston, president; Dr. Frederick H. Baetjer, Baltimore, secretary, and Dr. Charles F. Bowen, Columbus, Ohio, treasurer.

Eye Men Meet.—The American Academy of Ophthalmology and Otolaryngology held its annual meeting in Cincinnati, September 19-21. The following officers were elected: president, Dr. John J. Kyle, Indianapolis; vice-presidents, Drs. F. Park Lewis, Buffalo, Samuel Iglauer, Cincinnati, Burt R. Shurly, Detroit; secretary, Dr. George F. Suker, Chicago (reelected), and treasurer, Dr. Secord H. Large, Cleveland. Indianapolis was selected as the place of meeting for next year.

Erie Surgeons Meet.—The nineteenth annual meeting of the Association of Erie Railroad Surgeons was held in Chicago, October 4 and 5. The following officers were elected: Dr. William M. Bemus, Jamestown, N. Y., president; Dr. Herbert F. Gillette, Cuba, N. Y., vice-president; Dr. Bertis R. Wakeman, Hornell, N. Y., secretary-treasurer (reelected); and Drs. John G. Kelly, Hornell, N. Y., Salem Heilman, Sharon, Pa., and H. P. Jack, Canisteo, N. Y., executive committee. The next meeting is to be held in the Astor House, New York City.

Protection of Eyes of Sailors.—A special effort is being made by the Surgeon-General of the Navy to provide for the protection of gun-pointers and other enlisted men whose duties require keen eyesight, and Surgeon Eugene J. Grow has been detailed to the U. S. S8. *Solace* for special duty on this subject. The illumination of fire-rooms, of dynamo-rooms, and living spaces generally will have especial study, and recommendations will be made for the improvement of conditions. The eye-conditions of men detailed to adjust carbons on searchlights will be safeguarded in the future by special goggles or screens to cut off the actinic rays.

New Insurance Examiners Society.—The Society of Insurance Medical Officers was organized in Chicago, October 3, the avowed purpose being "to establish an organized center of thought and action for the advancement of medical knowledge appertaining to life insurance by personal intercourse of its members, presentation of papers, discussions, and such other methods as may from time to time be found desirable." The following officers were elected: president, Dr. Allison Maxwell, Indianapolis; vice-presidents, Drs. Calvin H. English, Fort Wayne, and Stephen S. Werth, Chicago; secretary, Dr. Edgar R. Hawley, Chicago, and executive committee, Dr. William F. Milroy, Omaha, C. Naumann McCloud, St. Paul, Joseph W. Johnson, Chattanooga, Russell M. Young, Des Moines, and Mason M. Lairy, Lafayette, Indiana.

FOREIGN NEWS

Cholera Death in England.—Foreign telegrams announce that the first death from Asiatic cholera in England occurred October 6, when a man who had been living in a lodging house in London, died in a public hospital.

Death of Professor Chrobak.—The cable brings word of the death of the noted Vienna gynecologist and surgeon, Professor Rudolf Chrobak, aged 70. He retired from the chair of gynecology two years ago, before reaching the age limit, as he felt the necessity of handing over the newly completed gynecologic clinic to younger men. He has been connected with the university since 1870, and has written numerous valuable articles on gynecology and obstetrics.

Death of von Leyden.—Cable dispatches announce the death, at the age of 78, of Ernst von Leyden, the eminent Berlin internist, to whom the Germans ascribe in large part the transformation in clinical instruction in the seventies. He was at first an army medical officer and then was called to a professorship at Königsberg, then succeeded Traube at Berlin and took charge of the first university medical clinic there in 1885. Since he founded the *Zeitschrift für klin. Medizin*, in 1879, his works have been published mainly in this journal. He was also instrumental in founding, in 1898, the *Zeitschrift für phys.-diätet. Therapie*, with Goldscheider, and with F. Klemperer, has published the *Deutsche Klinik* since 1900. He also, with Gerhardt and B. Fraenkel, published the *Zeitschrift für Tuberkulose- und Heilstättenwesen*, and also issued the *Zeitschrift für Krebsforschung*. All these journals used to contain frequent articles from his pen, especially on nervous diseases and cancer. He founded, in 1881, the Berlin Verein für innere Medizin and was long its president, and was the recipient of numerous honors at home and abroad during his long career.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Oct. 1, 1910.

Flies as Carriers of Infection

The Medical Department of the Local Government Board has for some time been conducting inquiries into the action of domestic flies as carriers of infections of various kinds, and has just published a third report on the subject. It contains observations by Dr. Graham-Smith on the ways in which artificially infected flies carry and distribute pathogenic and other bacteria, and there is also a summary by Dr. Bernstein of literature relating to the bionomics of *Eposmus muscæ*, a parasitic fungus by which large numbers of flies are destroyed. The manner of catching and keeping flies and the general character of the experiments are described. Diagrams are given showing the anatomy of the insects and the manner in which they may deposit tainted material on any surface on which they either feed or walk. Abundant evidence of the infective power of flies which had been fed on pure cultures of disease-producing bacilli has been obtained, but it is regarded as improbable that under natural conditions such feeding could occur. The effects of contaminating flies with non-pathogenic and putrefactive bacteria have not yet been studied, and the effects of season, temperature, atmospheric conditions, different diets, irregular and scanty feeding, and other disturbing factors have not received sufficient attention. The conclusion is drawn that under exceptionally favorable conditions certain bacteria can be recovered from the contents of the alimentary canal and fecal deposits of infected flies for several days after infection and that these flies are capable of infecting certain materials on which they feed, for several days.

Suicide of a Physician in Consequence of an Unfounded Charge

Some time ago, an inquest was held on an old man whose physician committed suicide in consequence of an unfounded charge of causing the man's death. The inquest showed that

the man had died from natural causes and that the physician's treatment had been proper. The inquest on the physician himself has now been held. His name was Quodros and he was of Portuguese nationality. Under the will of the patient, he and members of his family benefited to the extent of $1,000 in an estate of $10,000. It is not unusual for patients to show their esteem for their physicians by legacies, but this circumstance seems to have aroused the unfounded suspicion of the relatives of the old man. They communicated with the police, but who made the communication and on what grounds was not disclosed at the inquest.

The detective who interviewed the physician said that the latter answered all questions satisfactorily but was highly nervous, which was attributed to his nationality. Next morning the physician was found dead in bed poisoned by prussic acid. He left a note stating: "I cannot face the disgrace of being charged. I am innocent." The coroner remarked that the unsatisfactory feature of the case was the fact that wrong information had been given to the police. There were, he said, persons with diseased imaginations who often did a great deal of harm by saying things without apparent cause and without understanding fully what they were talking about. The police were not bound to state who gave them the information, but he was sorry that the persons responsible had not come forward and by frankly admitting their mistake make what reparation they could to the relatives. As they had not done so he could only express his contempt at their action. The jury reached a verdict of "suicide during temporary insanity."

PARIS LETTER

(*From Our Regular Correspondent*)

PARIS, Sept. 30, 1910.

Annual Meeting of French Gynecologists, Obstetricians and Pediatricians

The sixth Congrés français de gynécologie, d'obstétrique et de pédiatrie was held at Toulouse, September 22-27. Although the date conflicted with that of the International Congress of Gynecologists and Obstetricians held at St. Petersburg, there was a large attendance at the French meeting. The date had been fixed a long time beforehand, and most French specialists had remained faithful to it. In the opening address, Dr. Kirmisson, professor of clinical surgery at the Paris college of medicine, who presided, remarked that in view of the danger of depopulation, the physician ought, in all obstetrical cases, to make special efforts to save the child, and therefore it was necessary to have a full and exact knowledge of the entire history. Dr. Kirmisson proposed that a medical record be kept, which should be given to the mother at the time of the birth, in which the physician in charge of the case should have indicated the various incidents of the pregnancy and delivery.

The question of the pathogenesis and the treatment of the pernicious vomiting of pregnancy gave rise to a very interesting discussion. Dr. G. Fieux, *agrégé* professor at the Bordeaux college of medicine, believes that it is important, in the first place, not to forget the existence of simulators—women who are frightened by pregnancy, and who by force of desire, succeed in vomiting and growing thin to such a degree that they think that the physician's hand will be forced, and that he will be compelled to carry out their wishes. It is necessary, moreover, to differentiate vomiting which is prolonged and aggravated by toxemia from vomiting due to mixed causes, in which the toxic action is due to the nervous state of the patient. In the latter cases, while treatment is easy (suggestion, change of surroundings, isolation in a sanatorium), the condition is all the more deceptive among the patients whose vomiting seems to be really in consequence of the persistent and increasing toxemia. Treatment at the beginning should be almost entirely expectant, although we possess the means of heroic treatment, namely, evacuation of the uterus, which, however, ought not to be used until certain symptoms show that the woman's organism is unable to triumph over the toxemia. While many remedies are recommended in order to put an end to the vomiting while permitting the continuance of the pregnancy, they are mostly useless. Though we possess no means of acting directly on the toxemia of pregnancy itself, we have a means which, by preventing the digestive auto-intoxication from reinforcing the toxemia of pregnancy, will put the patient in better condition for resistance. This is a milk diet. Unfortunately in certain cases, a milk diet may augment the gastro-intestinal intoxication by the putrid transformation of the casein. In such cases it is better to give vegetable soup, water gruels, or even a little sheep's brains. In cases in which a milk diet is not tolerated, a hydrated diet in all its forms is prescribed (mineral waters, sweetened infusions, etc.). In cases in which the stomach rejects absolutely everything, the rapid dehydration should be combated by artificial serum given by hypodermic injections, or by high enemas. Pinard's experience leads him to conclude that as soon as the pulse-rate of a woman with toxic vomiting is permanently over 100, it is necessary to bring pregnancy to an end immediately (THE JOURNAL, May 14, 1910, p. 1623). Aside from all clinical considerations, such as pulse, temperature, loss of flesh, there are, according to Dr. Fieux, two complications which constitute immediate indications for an interruption of pregnancy; these are the appearance of polyneuritis, or of true icterus, characterized by the passing of biliary pigment in the urine. Whatever be the condition in which one finds one of these patients, it is never right, he says, to refrain from operation. However desperate the situation may seem, it is the physician's duty to evacuate the uterus as soon as possible. This procedure, rapidly executed, sometimes resuscitates an almost moribund patient. The best operative technic is that which without violence will permit total evacuation with the greatest rapidity. The use of laminaria tents, Hegar's bougies, and small Champetier de Ribes' bags almost always permits the rapid, if not easy attainment of a dilatation sufficient for the total evacuation of the uterus.

Dr. Lepage, obstetrician of the Paris hospitals, objects to the essayist's conclusions as too pessimistic. He believes that by appropriate treatment (a diet of milk, or milk and vegetables, with injections of artificial serum), abortion may often be avoided, while it is necessary to watch the patient closely in order to intervene without delay if necessary. It is difficult, however, to define the precise moment at which operation is necessary. A pulse of 100 is not an absolute criterion. In certain cases, moreover, the cessation of vomiting is not a favorable symptom at all; it indicates an extremely grave condition of which it is necessary to warn the family. Dr. Lepage held that in desperate cases operation should be resorted to, and that retention of the urine was an unfavorable sign. Dr. Achard, professor of general pathology at the Paris college of medicine, emphasized the tendency toward vomiting of certain individuals, in whom vomiting persists after the disappearance of the cause. In one case which he had observed, after a prolonged and absolutely useless course of milk diet, the patient's general condition improved and the vomiting ceased on a diet of broth and raw meat. Achard concludes therefrom, that one ought not to persist in a course of treatment which seems inefficacious, but should select another one, however opposed it may seem to the usual course in such cases. Dr. Pinard, professor of clinical obstetrics in the Paris college of medicine, said that he was astonished to hear Dr. Lepage advise against operation in desperate cases. Pinard believes that one should always attempt to save life; and that even when one foresees that the woman may die on the operating table, operation should be tried after the family has been warned.

Death of Professor Raymond

Dr. Fulgence Raymond, clinical professor of diseases of the nervous system at the Paris college of medicine, has just died at the Château de la Planche, near Poitiers. He was 66 years old. He was educated at the veterinary school of Alfort, where he became, in 1866, head of the department of anatomy and physiology. He wished, however, to become a physician, and at 33 he began the Latin studies necessary for his baccalaureate degree, and entered the medical school. In 1878 he was appointed physician of the hospitals, and in 1880 *agrégé* professor at the college. He was a pupil of Vulpian and of Charcot, and at the death of the latter he was almost unanimously chosen to occupy his place, which he held from 1894 until his death. He had been since 1899 a member of the Académie de Médecine. He had published his clinical lessons on the nervous system, and a book on the neuroses and psychoneuroses.

Measures Against Cholera

In consequence of the increase of cholera in Italy, the sanitary service has taken new precautions at Marseilles. All ships arriving from the infected regions will undergo quarantine at Friuli. They will be admitted into the port of Marseilles only on presentation of clean bills of health from the French consul of the port of departure. Fruits and vegetables coming from the regions affected by the epidemic will be absolutely excluded at the frontier

BERLIN LETTER

(*From Our Regular Correspondent*)

BERLIN, Sept. 22, 1910.

Personal

Prof. L. Kuttner, medical director of the Rudolf Virchow hospital, has been appointed director in chief of the same hospital as the successor of Professor Goldscheider.

Campaign Against Ankylostomiasis

At the second international congress for industrial diseases held in Brussels a short time ago, the subject of hookworm disease was thoroughly discussed by physicians of various nations. An extensive report on this subject was made by the experienced director of the hygienic institute in Gelsenkirchen, Professor Bruns. He commented on the importance, both for prevention and treatment, of the worm-carriers. The difficulty of this task is shown by the fact that there are in the Ruhr coal districts about 350,000 miners. Microscopic examination of the stools seems to be the only reliable means of detecting the presence of the hookworm. The feces are mixed with powdered animal charcoal and placed for several days in the incubator, so that the larvæ develop from the eggs. By this means, devised by Loos, Bruns has obtained twice as many positive results as formerly. Of 8,000 persons with infected stools simple microscopic examinations gave positive findings in 40 per cent. but the cultural method yielded positive results in 90 per cent. For the treatment, extract of male fern was used with the best results. Bruns had 5 cases of blindness in 40,000 treatments. In prophylaxis, the greatest cleanliness is important; especially all contact with the stools must be avoided and no defecation permitted in the mines. As a result of application of these measures there has been a very satisfactory reduction of typhoid and dysentery as well.

Marine Convalescent Home

A seamen's convalescent home has been recently opened in a suburb of Berlin for the reception of the officers and crew of the navy and merchant marine and for the officials of the colonies who have fallen sick on the sea or in foreign countries and are in need of care during their convalescence. Sixty beds are provided; they have been endowed by private benevolence. The kaiser and kaiserin made the first contribution to this sum. The entire cost was $180,000 (750,000 marks).

Resolutions Voted by the German Medical Press Association

The general assembly of the Freie Vereinigung der deutschen med. Fachpresse was held at Berlin September 17, under the presidency of its business manager, Dr. Spatz, editor of the *Münchener med. Wochenschrift*. His report showed the satisfactory increase of the membership to about 150. Then the first and most important item of business, namely, the "reform in medical publication" was taken up for discussion. The following leading principles were adopted:

To avoid the excessive scattering of medical literature, the concentration of all publications in the regular periodicals is advocated. Especially the issuing of *Festschrifts*, special reports, annuals, etc. on the part of the scientific institutions and hospitals should be rigorously limited. The issuing of inaugural dissertations as separate publications is also objectionable. The essential content of such works should be published in brief in some periodical by the author or the director of the institution. In original communications the greatest possible brevity should be the rule. Repeated citation of compiled bibliographies is useless and exasperating. Journals should as far as possible publish only such articles as are suitable to their special field. Preliminary reports should in general present only actual facts. Their publication is to be limited as much as possible. To obtain as complete an outlook over the borderland subjects as possible, it may be advisable for journals publishing abstracts to exchange abstracts. It would be very desirable if the great special societies would favor the development of abstract work by supporting a special abstract journal. J. Schwalbe, editor of the *Deutsche med. Wochenschrift*, stated that, thanks to the united efforts of the medical press and the manufacturing chemists, there had been a marked reduction in the production of medical write-ups for pay. The drug manufacturers who formerly secured for a certain fee the publication of fraudulent articles by physicians have abandoned this mode of advertising since they have learned that the elaborate efforts of these mercenary writers will not be published in the journals belonging to the medical press association nor abstracted if they have appeared in other journals. In accordance with a resolution of the previous general assembly the names of physicians whose cooperation for other reasons is not desired by the journals of the association were also placed on the "black list." Finally also those journals whose editorial principles are objectionable on ethical grounds were published by name. In consideration of the fact that many of the designated authors and organs are repentant and have reformed, it was resolved on motion of the speaker presenting the report that their names be stricken from the list, from which it is to be assumed that they will hereafter abide by the principles of the medical press association. Still more important was another motion presented by this speaker which will seriously affect the drug trade. In order to counteract the deception of physicians by the false statements by manufacturers with reference to many medicinal preparations, a resolution was adopted, binding on the members of the association, that advertisements of medicines and other preparations which are objected to by the special committee in charge of the matter shall not longer be accepted by the journals which belong to the association, and of course write-ups of these objectionable preparations will be excluded from publication.

On motion of Dr. Joachim, it was resolved that at the next general assembly the adoption of a uniform method of literary references in medical publications should be discussed and he was empowered to make suggestions. Finally on motion of Dr. Schnirer, editor of the *Klin.-therap. Wochenschrift*, who referred to the objectionable occurrences which had accompanied the publication of the results of treatment with Ehrlich's "606," a resolution was adopted to the effect that the association announces that it will in future refuse to accept articles from authors who have communicated to the daily press the contents of an article before its appearance in the professional journal to which it has been presented.

VIENNA LETTER

(*From Our Regular Correspondent*)

VIENNA, Sept. 29, 1910.

Information About Free Hospital Beds

The decentralization of the hospital management in this city has often led to very alarming conditions; patients have been driven to several hospitals without obtaining a bed. Recently, when on account of climatic conditions there was really a scarcity of such accommodation, it has happened that children died in the arms of their mothers while seeking help for hours and hours without being admitted to the ward. Now in the Vienna General Hospital a bureau has been installed by the government which will receive every morning and every evening from all charitable institutions in this city by telephone authentic information of all vacant beds and beds to be vacated within the next twelve hours. As soon as one of these beds is occupied again, the fact will be telephoned at once to the bureau. Thus, whenever a bed is wanted, any policeman or doctor may at once inquire when and where the patient can be accommodated. This has been done especially under the pressure of the cholera scare, in order to prevent a prolonged stay of an infectious patient in a household.

The Hungarian Institutions for the Care of Children

From the data now obtainable, it appears that upward of 50,000 children are cared for by the government in Hungary, and that an equal number have outgrown this care and either have been given back to their parents or have become independent members of society. There are sixteen such institutions in the country, and every Hungarian-born child has a right to apply for state care, if it has no maintenance or supporter; no documents are asked for, but a special inquiry office tries to find out the true reason why the child is not cared for by its family. The system of bringing up such children, if they are healthy, in suitable state-controlled agricultural households is very useful, for it provides healthy laborers, badly wanted in the country. Ill or weak children are properly cared for in hospitals and other institutions attached to the children's homes. One very commendable feature of this scheme, which altogether costs the state some $400,000 a year, is the continuation of the family bonds between the child and its relations. The child is, so to say, only entrusted to the state for education, as it was in ancient Sparta, but still the members of the family are free to visit it as often as they choose, provided they exert no bad influence. This very modern—in fact, unique—experiment on a great scale was much commented on by the members of the last Congress in Budapest, and really is due partly to political, partly to social considerations.

Marriages

FREDERIC ATWOOD BESLEY, M.D., to Mrs. Myra E. Busey, both of Chicago, October 6.

DANA WARREN DRURY, M.D., Boston, to Mrs. Elizabeth Small Boyce, at Baltimore, September 30.

HARRY B. HAYWARD, M.D., Hammond, Ind., to Miss Josephine C. Badenoch of Chicago, October 12.

ELMER EATON CURTIS, M.D., U. S. Navy, to Miss Rose Bearwald of San Francisco, September 20.

DANIEL BERNARD HAYDEN, M.D., Chicago, to Miss Julia Howard of Farmer City, Ill., October 8.

HENRY A. PFEIFER, M.D., Jackson, Wis., to Miss Frances Murray of Manawa, Wis., September 21.

HENRY CLAY MICHIE, M.R.C., U. S. Army, to Miss Louise Robertson, at Charlottesville, Va., September 30.

WALTER J. CLUTHE, M.D., Tell City, Ind., to Miss Marguerite Moore of Indianapolis, at Chicago, September 20.

WILLIAM WELDON PASCOE, M.D., Tacoma, Wash., to Miss Helen North Wright, at Dallas, Texas, October 12.

D. E. LYBROOK, M.D., Young America, Ind., to Miss Matilda Browne of Marion, Ind., at Indianapolis, September 26.

WILLIAM BURGESS CORNELL, M.D., Hawthorne, Mass., to Miss Bettie Grace Duncan of Lutherville, Md., October 11.

Deaths

Edwin Mills Nelson, M.D. Miami Medical College, Cincinnati, 1874; a member of the Missouri State Medical Association; for ten years managing editor of the St. Louis *Courier of Medicine;* at one time lecturer in the St. Louis Medical College; clerk of the board of health, and attending physician at the Webster Orphan Asylum and St. Louis Maternity Hospital; one of the organizers of the St. Louis Training School for Nurses; died at his home in St. Louis, September 20, from disseminated sclerosis, aged 62.

Delorme W. Robinson, M.D. Kentucky School of Medicine, Louisville, 1882; a member of the American Medical Association, and the National Association of Railway Surgeons; formerly president, later superintendent and secretary of the South Dakota State Board of Health; local surgeon of the Chicago and Northwestern Railway Company, and chief of staff of St. Mary's Hospital, Pierre; died at his home in that city, September 26, from pneumonia, aged 55.

Abijah I. Beach, M.D. Western Reserve University Medical College, Cleveland, 1856; assistant surgeon of the Ninth Kansas Volunteer Cavalry during the Civil War; formerly United States pension examiner at Council Grove, Kan.; from 1881 to 1883 physician at the Tulalip Indian Reservation, Wash.; for twenty months surgeon of the Washington State Soldiers' Home; died at his home in Renton, Wash., September 25, from nephritis, aged 74.

George Little, M.D. University of Pennsylvania, 1884; a member of the Medical Society of the State of Pennsylvania; formerly president of Schuylkill County Medical Society; health officer of Tamaqua borough; deputy coroner and registrar for Tamaqua district, and local representative of the State Board of Health; died suddenly, while making a professional call in Tamaqua, October 3, from heart disease, aged 48.

Thomas Everett Alsop, M.D. Medical College of Virginia, Richmond, 1887; a member of the Illinois State Medical Society, and formerly president of the Clinton County Medical Society, and Clinton County Board of United States Pension Examiners, and coroner and member of the board of health of Clinton county, and physician to the county almshouse; died at his home in Carlyle, September 22, from heart disease, aged 50.

Hubert Barnard Gudger, M.D. University of Pennsylvania, Philadelphia, 1909; of Asheville, N. C.; died in the Grand Union Hotel, New York City, October 2, from an incised wound of the throat, believed to have been self-inflicted while despondent on account of ill health, aged 25.

Orville William Collins, M.D. Harvard Medical School, 1887; of South Farmington, Mass.; a member of the American Medical Association; local surgeon for the Boston and Albany Railroad for many years; a member of the staff of the South Farmington Hospital; died in Jefferson, N. H., September 5, from intestinal obstruction, aged 59.

George R. Vincent, M.D. University of Vermont, Burlington, 1865; a member of the State Medical Society of Wisconsin; for several years president of the village board of Topah, and a member of the state legislature in 1879; died at his home, September 11, from cerebral hemorrhage, aged 69.

George W. Shepherd (license, Ind., 1897); a member of the American Medical Association; a veteran of the Civil War, and a member of the local board of pension examiners; the oldest practitioner of Jay county, Ind.; died in Redkey, September 26, from cerebral hemorrhage, aged 71.

Peter E. Richmond, M.D. McGill University, Montreal, 1873; of Mount Pleasant, Mich.; a member of the American Medical Association; and a member of the local board of pension examining surgeons; died suddenly in Saginaw, September 19, from fatty degeneration of the heart, aged 64.

George Franklin Witter, M.D. University of Michigan, Ann Arbor, 1856; of San Jose, Cal.; a member of the American Medical Association, and formerly president of the State Medical Society of Wisconsin; was struck by an automobile and instantly killed, October 2, aged 80.

Joel M. Partridge, M.D. Hahnemann Medical College, Chicago, 1868; of South Bend, Ind.; a veteran of the Civil War; formerly a teacher in Berea (Ky.) College; died in Epworth Hospital, South Bend, September 30, after an operation for disease of the kidney, aged 75.

Fred Norris Brett, M.D. Rush Medical College, Chicago, 1896; a member of the American Medical Association; surgeon to St. Mary's Hospital, Green Bay, Wis.; and a member of the city council; died at his home, September 23, from pulmonary edema, aged 40.

Thomas Drury Edwards, M.D. University of Tennessee, Nashville, 1884; a member of the American Medical Association, and a specialist on diseases of the eye, ear, nose and throat; died at his home in Union City, Tenn., May 15, from gastric ulcer, aged 54.

Jared Spooner, M.D. University of Michigan, Ann Arbor, 1871; University of Pennsylvania, 1890; a member of the Indiana State Medical Association, and a veteran of the Civil War; died at his home in Peru, September 25, from multiple neuritis, aged 64.

Noah Howard Burt, M.D. University of Pennsylvania, 1895; president of the board of health of Ocean City, N. J., and medical inspector of the public schools; died at the University Hospital, September 24, after an operation for appendicitis, aged 50.

Benjamin F. Redshaw, M.D. Northwestern University, Chicago, 1899; of Curran, Ill.; a member of the American Medical Association; was instantly killed in a collision between interurban trolley cars, near Staunton, Ill., October 4, aged 46.

Henry C. Ganaway, M.D. Meharry Medical College, Nashville, Tenn., 1902; of Decatur; a member of the Illinois State Medical Society; was instantly killed, October 4, in an interurban trolley line collision, near Staunton, Ill., aged 35.

Elias Bedell Boyce M.D. Albany (N. Y.) Medical College, 1858; for two terms supervisor and for one term coroner of Rensselaer county, N. Y.; died at his home in Averill Park, September 23, from cerebral hemorrhage, aged 72.

William Cowpe Gardner, M.D. Long Island College Hospital, Brooklyn, 1892; a member of the Medical Society of the State of New York; died at his home in New York City, September 28, from heart disease, aged 55.

Whitfield Stephen Coursen, M.D. College of Physicians and Surgeons, New York City, 1848; said to have been the oldest practitioner of New Jersey; died at his home in Oak Ridge, September 25, from pneumonia, aged 86.

Alexander A. Walter, M.D. Imperial University of St. Vladimir, Kieff, Russia, 1872; for fifteen years a surgeon in the Russian service; died at his home in Grand Rapids, Mich., September 19, from diabetes, aged 55.

Charles D. Moore, M.D. University of Louisville, 1850; a veteran of the Mexican War, and a surgeon in the Federal service during the Civil War; died at his home in Cane Valley, Ky., September 26, aged 84.

Charles Joseph Dowling, M.D. Baltimore Medical College, 1906; of Springfield; a member of the Massachusetts Medical Society; died in Mercy Hospital, Springfield, September 26, from uremia, aged 30.

Archie Allego Sweet, M.D. Ohio Medical University, Columbus, 1905; a member of the Ohio State Medical Association; died at his home in Mingo Junction, September 30, from typhoid fever, aged 30.

Theodore Romeyn Hornblower, M.D. College of Physicians and Surgeons, New York City, 1871; of Jersey City, N. J.; died at his summer home in Allendale, N. J., August 7, from dropsy, aged 65.

Oliver Cromwell Wilson, M.D. Starling Medical College, Columbus, Ohio, 1897; formerly of Benwood, W. Va.; died at his home in McMechen, W. Va., September 24, from heart disease, aged 37.

Archelaus Smith Davison, M.D. Eclectic Medical Institute, Cincinnati, 1891; a practitioner for thirty-five years; died at his home in St. Clair, Mo., February 20, from organic heart disease, aged 68.

Augustus Clay Lucas, M.D. New York University, New York City, 1876; of Minoqua, Wis.; died in that place, September 6, from concussion of the brain following a fall down stairs, aged 56.

John W. Huckins, M.D. California Eclectic Medical College, Los Angeles, 1886; for many years a practitioner of Vallejo, Cal.; died at his home in San Francisco, September 24, from septicemia.

Henry Robert Wilson, M.D. New York University, New York City, 1873; of Santa Barbara, Cal.; died in the Loma Linda Sanatorium, March 27, from acute gall-stone colic, aged 64.

Albert Warren Shoup, M.D. Louisville (Ky.) Medical College, 1894; of Battle Ground, Ind.; died at St. Elizabeth's Hospital, Lafayette, September 12, from hepatitis, aged 53.

Oscar F. Thomas, M.D. Northwestern University Medical School, Chicago, 1882; died suddenly at his home in Lakeland, Minn., September 28, from heart disease, aged 67.

James S. Hollopeter, M.D. St. Louis College of Physicians and Surgeons, 1893; died suddenly at his home in Houston, Ohio, September 20, from heart disease, aged 51.

Roy Samuel Porter, M.D. State University of Iowa, Iowa City, 1903; of Moline, Ill.; died in the Watertown State Hospital, August 31, from general paresis, aged 35.

Louis Edward Cook, M.D. Eclectic Medical Institute, Cincinnati, 1882; of Forest, Ohio; died suddenly in his automobile, September 23, from heart disease, aged 51.

John Erhard, M.D. Long Island College Hospital, Brooklyn, 1896; died at his home in College Point, Flushing, L. I., September 28, from tuberculosis, aged 48.

John F. McKinney, M.D. Eclectic Medical Institute, Cincinnati, 1876; died suddenly at his home in Arcola, Ill., September 14, from heart disease, aged 63.

Frank Johnston, M.D. College of Physicians and Surgeons, Baltimore, 1883; died at his home in Trenton, N. J., September 24, from nephritis, aged 55.

Daniel M. Dunn, M.D. Western University, London, Ont., 1894; a member of the Arkansas Medical Society; died recently at his home in Dell, Ark.

Thomas Andrew Dillon (license, ten years practice, Ohio); an eclectic practitioner of Dayton; died recently at his home, from heart disease, aged 53.

William Burriss, M.D. Pulte Medical College, Cincinnati, 1886; died at his home in Burrton, Kan., September 13, from general breakdown, aged 71.

William H. Woodbury, M.D. Hahnemann Medical College, Chicago, 1866; died at his home in Chicago, October 6, from paralysis, aged 85.

James K. Stout, M.D. Kentucky School of Medicine, Louisville, 1866; died at his home in Omaha, September 26, from anemia, aged 67.

Max Levy, M.D. Tulane University, New Orleans, 1876; died at his home in New Orleans, September 16, from heart disease, aged 59.

Henry S. Smith (license, forty-seven years of practice, Ky., 1894); died at his home in Woodville, Ky., September 18, aged 92.

Lewis Sterling Bowles, a practitioner of Paoli, Ind., for many years; died at his home, September 18, from meningitis, aged 76.

Thomas Hay, M.D. University of Pennsylvania, Philadelphia, 1861; died at his home in Philadelphia and was buried, Nov. 4, 1909.

James Cherry, M.D. Jefferson Medical College, 1871; died recently at his home in Eden, N. Y., from bronchitis, aged 62.

Isaac N. Van Pelt, M.D. Cincinnati; died at his home in Lamar, Mo., July 22, from rheumatism, aged 72.

Pharmacology

Solubilities of the Pharmacopeial Organic Acids and Their Salts

The determination of solubilities is a matter of great importance and the data given in chemical works are frequently unsatisfactory. It is often assumed that the determination of solubility is a very simple matter, whereas it is sometimes a difficult undertaking and the results obtained even by good observers frequently do not agree. This is probably due to the fact that very few men have worked under identical conditions, either of the purity of the substance or of the solvent, or of equally exact temperature, or regulation or care in securing the saturation of the solution. As data on solubility will enter into the next edition of the Pharmacopeia, it is important that they should be as accurate as possible.

The work of Atherton Seidell on the solubilities of the pharmacopeial organic acids and their salts published in *Bulletin* 67, of the Hygienic Laboratory, Public Health and Marine-Hospital Service, is opportune and will be of great value to the Committee on Revision. Some interesting conclusions are pointed out: his results in the examination of 35 compounds show that satisfactory agreement with the figures of the Pharmacopeia exists only in the case of benzoic, camphoric, gallic and tartaric acids, in the aqueous solutions, and of benzoic acid, ammonium benzoate, ammonium salicylate, salicylic acid and phenyl salicylate in the alcoholic solutions. Of the remaining results, the differences vary from about 5 to 100 per cent. His experiments show that impurities do not affect the solubility sufficiently to make solubility determinations reliable as tests of purity. He does not advise the introduction of a standard method for solubility determinations into the U. S. Pharmacopeia; he finds that in no case is it possible to predict from the solubility of a substance in alcohol and water separately what it will be in any mixture of these two solvents. The pharmacopeial statements in regard to the reaction of a number of salts toward indicators should be revised. Seidell recommends certain improvements in the pharmacopeial methods of assay and quantitative analysis.

This work is another example of the value of the scientific investigations which are being undertaken by the hygienic laboratory, a work which is affording great assistance to the advance of medicine in all its departments.

ADVERTISING SPECIALISTS CONVICTED OF FRAUD

W. H. Hale, A. S. Dyar and Roland Register Receive Heavy Fines and Prison Sentences

Again the federal authorities have done the public a service by protecting it from the machinations of medical impostors. W. H. Hale of Jackson, Mich., a quack with a penitentiary record, connected himself with A. S. Dyar and Roland Register, two "advertising specialists" who operated separate institutions in New Orleans. The scheme was to have Hale pose as a "noted London specialist" who was visiting New Orleans and who had offered to assist each of the local "specialists" in giving professional advice to such victims as they might get as patients. The mailing lists of Dyar and Register were brought into service and a "strictly personal" circular letter was sent to several hundred past and prospective victims of these two "specialists." The letters offered the "patients" an opportunity of getting the "noted" visitor's opinion on their cases if they would call at the office of the local "specialist." The details of the case follow:

Dyar and Hale were charged and tried separately from Register and Hale. In each case the defendants were charged first, with having used the post-office of the United States in the execution of a scheme and artifice to defraud, previously formed; second, with having conspired to commit an offense against the United States, namely, the use of the mail in the execution of the scheme to defraud as set forth in the

first count. The case against Dyar will be described; that against Register was practically identical with it.

The scheme to defraud was executed by the mailing, by the defendant Dyar, in the case in which he and Hale were defendants, of a "form" letter made to appear as if in typewriting, addressed to two thousand or twenty-five hundred different persons, some of whom had been Dyar's former patients, and had ceased to consult him, and others of whom had interviewed him with a view of taking his treatment but who never took treatment from him. The letter follows:

NEW ORLEANS, Feb. 27, 1908.

"*Dear Sir*:—I hope you will pardon this letter, but when you have read it, I know you will. It is natural that I feel a deep interest in those consulting me regarding their physical condition, and especially in those I have treated and also in those I am still treating. I feel that you know that I have been perfectly sincere and honest in everything that I have done and said, that I have always studied your case carefully and earnestly endeavored to deserve your confidence and friendship—in other words I have tried to act out the Golden Rule.

"The fear that I have not cured you has been causing me some worry. Meeting Professor W. H. Hale, M.D., of London, England, the noted expert in genitourinary diseases, who is just now on a visit to the United States, and with whom some years ago, I had a very close acquaintance, I took the liberty of consulting this noted gentleman about your case. He gave me much light and assured me that there was a safe and permanent cure for your trouble.

"So delighted was I, that I have, after much persuasion, secured Professor Hale's promise to spend next Thursday, Friday and Saturday and Sunday, March 5th, 6th, 7th, and 8th WITH ME, on which occasion he will meet you, give you a consultation and whatever advice necessary, for which there will be no CHARGE WHATEVER to you.

"When you stop to think that as a rule Professor Hale charges from $100 to $1,000, for consultation alone, you can possibly understand what it means to you to get the benefit of his valued services without any charge whatever, and because of his personal friendship for me, he has consented to see a limited number of patients, of whom you are one.

"Professor Hale is regarded as one of the greatest living specialists in Nervous, Chronic and Special Diseases, I, therefore, ask you to call at my office on either of the days mentioned: Namely: Thursday, Friday, Saturday or Sunday, March 5th, 6th, 7th, and 8th, at any hour that suits your convenience, between 9 a. m. and 8 p. m., as the doctor will be with me each day during these hours.

"I can hardly express to you the pleasure and satisfaction I experience in having Professor Hale visit me, and I hope that you will avail yourself of my efforts in your behalf.

"Yours in the cause of Health,

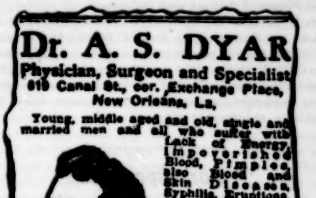
A. S. DYAR, M.D."

This letter was evidently designed to deceive those who received it into believing that it was a special letter to each of them. This deception was emphasized by the statement in each letter that Dyar had been much worried by the fear that he had not cured each of the twenty-five hundred individuals, and further by the statement that he had consulted "Professor W. H. Hale, M.D." in regard to the cases of each of the different individuals to whom the letter was sent, and further by the statement that "Professor Hale" had given him (Dyar) much light and had assured him that there was a safe and permanent cure for the trouble of each of the various persons.

The so-called Professor Hale who was represented as being of London, England, just then on a visit to the United States, was, as a matter of fact, and had been, for the last nine or ten years, previous to the mailing of the letter in February, 1908, a resident and a registered voter of Jackson, Michigan. Some years previously Hale operated the "British Medical Institute" at Jackson. This was a typical "lost manhood" concern and did a thriving business until Hale was prosecuted under the medical practice act and his "institute" closed. He then began his itinerant career as the "great London specialist."

Physicians of prominence and standing in the branches of their profession in which Hale was represented to be an expert showed that Hale was not known and had never been heard of by them and that if he had been a noted expert in the branches of the profession mentioned and "one of the greatest living specialists," as represented in the letter, they would have known of him. The proof in regard to Hale, however, went considerably further, and showed that in 1891 he had been indicted in the United States District Court in Denver, Colorado, for the crime of having used the mails in a scheme to defraud.

Hale's method in Denver consisted in practicing under the ficticious name of a Chinese doctor, "Dr. Gun Wa," who by the use of Chinese herbs that he professed to have, claimed to make remarkable cures. After the indictment in Denver, Hale seems to have fled to England, for in 1892 he was indicted in Liverpool, England, for the fraudulent practice of medicine, in connection with some other man, who together promised to cure catarrh and catarrhal deafness, and prem-


Dr. A. S. DYAR
Physician, Surgeon and Specialist
619 Canal St., cor. Exchange Place,
New Orleans, La.
Young, middle aged and old, single and married men and all who suffer with
Lack of Energy, Impoverished Blood, Pimples, also Blood and Skin Diseases, Syphilis, Eruptions, Hair Falling, Bone Pains, Sore Throat, Ulcers, Swellings, Effects of Mercury, Kidney and Bladder Troubles, Weak Back, Burning Urine, Stricture, receive searching treatment, prompt relief and cure for life. Both sexes treated confidentially and privately. Piles, Fistula, Fissure and Rupture, Nervous Debility, Failing Memory. All cases can be as successfully treated by mail or by personal interview. Send for Purse Question List.
Address
DR. A. S. DYAR, "The Specialist."
619 Canal St., cor. Exchange Place,
New Orleans, La.

One of Dyar's advertisements; Register also advertised in a similar way. Hale for some years operated the "British Medical Institute" at Jackson, Mich. This was a "lost manhood" concern of the usual type.

ised to furnish medicines for this purpose, all of which claims were false.

He was tried under this indictment in England, and sentenced to serve a period of eighteen months in the penitentiary at Walton, England. On his return from England to the United States, after the expiration of his sentence in England, he was arrested in New York under the Denver indictment and taken back to Denver where he was tried and convicted and sentenced to serve a period of eighteen months in the penitentiary.

After the expiration of his sentence, he seemed to have gone to New York, for in 1895, he was there indicted in connection with some other man for grand larceny of $1,500 from one John McCallum, whom Hale told that he was suffering with serious kidney trouble, from which he would soon go crazy or die and of which they would cure him by means of what they called "radium cure." On these representations he charged McCallum $1,500 for a small vial of "radium cure." Hale pleaded guilty to this indictment and was sentenced to a term of eight months in the penitentiary at Blackwell's Island, New York.

In addition to the above evidence, proving that Hale was not a noted expert, or one of the "greatest living specialists" as he was represented to be in the letter, several physicians from Ohio and Michigan testified regarding Hale's standing in the profession and as to whether or not he was entitled to practice medicine in Ohio where he claimed to have graduated from the American Eclectic College of Medicine, or in Michigan where he resided. The evidence of these physicians, two of whom were secretaries of the state boards of health of Ohio and Michigan, respectively, showed that the American Eclectic College had been investigated by these two states and was not in good standing, and the diplomas therefrom were not recognized as authority to practice medicine and that, although Hale had applied for re-registration under the laws of Michigan, his application had not been granted and he was not and had not been for some years authorized to practice medicine in Michigan. Of course, Hale produced physicians of his class from New York, Chicago and elsewhere, who swore to his excellent standing as a surgeon and diagnostician, and he referred to having license to practice medicine in Maine, Arkansas and Oklahoma.

Hale, Dyar and Register were found guilty and were sentenced to pay fines varying from $1,000 to $5,000 and to serve terms in the federal prison of from twelve to eighteen months each. United States District Attorney Charlton R. Beattie and Postoffice Inspector F. J. G. Pulsifer deserve great credit for the successful outcome of these cases; they have done the public a substantial service.

Correspondence

The Part Played by the American Medical Association in the Improvement of Medical Education

To the Editor:—It was with the keenest pleasure that I read your editorial in THE JOURNAL, May 21, 1910, on the reorganization of the Medical Department of Washington University, St. Louis. There is much that is of midnight darkness in American medical education; but, thanks to an awakening realization of conditions, there are also some rays of light, and one of them is this re-born medical school with its magnificent endowments and clinical facilities, its distinguished faculty, and chiefly its true scientific medical spirit, as evidenced in the educational standards laid down and in the selection of the men who will direct its medical destinies. As you suggest, its influence on medical education in that part of the country will be profound. May its educational requirements rise higher every year, and its light gleam brighter.

In this reorganization we see an illustration of what the American Medical Association, through its Council on Medical Education, is accomplishing for decent medical schooling in the United States. Many and diverse are the lines along which the Association is doing yeoman service; but in none of them does it appear that more credit must ultimately redound to this national Association, and a more lasting good to the whole people, than in its work for the reform of medical education.

The education and training of physicians in this country has been, hitherto, largely a commercialized disgrace and a national shame that has made the name of so-called American medical colleges, with a few exceptions, a by-word in other civilized countries. Disastrous enough has been this national crime to a credulous people. Who can compute the fearful toll in blood and life that has been exacted from them through the ignorance and incompetence of youthful, quiz-made physicians, suddenly turned loose on an undiscriminating public? How many of these men were morally and mentally unfit to assume the enormous responsibilities that are of necessity placed on the shoulders of every practicing physician? Armed with the miraculous sesame of M.D., and clothed with mystery, they have marched forth in annual armies to heal and to make glad; but alas, also, to learn many necessary things in sorrow and bitterness to themselves and to their patients. The majority of these men should have been more adequately trained for the practice of their profession, and some of them should have been eliminated as not being especially qualified for the high calling of physician. Not the least of the advantages of a thorough preliminary and medical education is the remorseless elimination that the process silently accomplishes. A few naturally good physicians may thus fail to get their diplomas, but such an injury to few individuals is not to be compared for a moment with the great good that will come alike to the profession and the laity by the exercise of a long-continued selective and eliminative education that will well test the inherent worth of all candidates for the degree of doctor of medicine. Of course, no system of medical education can give the young doctor just stepping into private practice that knowledge which comes only with long years of experience and observation; but, other good things being equal, the more matured and the more thoroughly trained, the young practitioner, the less he will learn in his early practice at the expense of his patients.

It is high time that the profession as a whole wakes up to its great responsibility for the proper education of medical students. To condone the disgraceful standards that prevailed during the last half of the nineteenth century, and which still exist to a considerable extent, is nothing short of criminal negligence. The country is so well supplied with medical men that there cannot be the slightest danger of an under production, however much the standards for licensure may be raised. We have been paying too great heed to quantity; it behooves us in the future to look sharply to quality.

Already we have a few medical colleges of the first rank, standing out as beacon lights in the educational world; types of what medical schools should be, and will yet be in this country. We all know these schools both old and new and take a just pride in them and their high ideals, and in the power they are exerting throughout the land.

In the meantime, let a united profession strive to make for every school surviving the test, a standard in which a reasonable amount of preliminary education will be demanded for admission to its medical course; in which adequate and wholly satisfactory clinical and laboratory facilities must be furnished in compliance with minimal standards laid down by the proper authorities; in which full nine-month annual sessions are given; and in which at least a one-year hospital internship, or its equivalent, is required before the candidate is eligible to engage in private practice in any of the several states. With such standards or even approximately such standards, prevailing, I believe our dark problem of "150 medical colleges," would be solved for all time, and in an illuminating manner at that.

In conclusion, I wish to congratulate the American Medical Association and its leaders on what it has accomplished, and on the immense good that it will yet accomplish through the work of its Council on Medical Education. It has placed the medical profession and the general public deeply in its debt; and we have every reason to believe that this debt will be greatly increased in the future. The task before it of extricating medical education in the United States from the veritable slough in which it has lain these many years, is a labor and a problem worthy of the patience, perseverance, and intelligence that will finally bring about its solution.

GARFIELD G. MCKINNEY, M.D., U. S. Army.

Lumbar Puncture in Poliomyelitis

To the Editor:—Dr. Flexner's admirable paper on the important work of himself and co-workers on poliomyelitis, in THE JOURNAL, Sept. 24, 1910, p. 1105, interested me greatly. I disagree with him, however, in his advocacy of the routine and early use of lumbar puncture by physicians in suspected cases, and I cannot refrain from commenting on this question.

1. Until we have a definite serum to use, I see no value in determining by examination of the cerebrospinal fluid the presence of a slight lymphocytosis, especially since if done before paralysis has occurred, the puncture may be blamed by the relatives for the succeeding paralysis. As this lymphocytosis occurs early at a period when patients are rarely observed closely, lumbar puncture might be done later than the operator thinks he is doing it.

2. Is this slight lymphocytosis with subsequent clearing of fluid and constant increase of polymorphonuclear leukocytes characteristic of poliomyelitis only? In other words, I cannot see in what way it makes the diagnosis any more definite than the excessive perspiration, the irregular tremor, the irritability and extreme prostration, the frequent suppression of urine, etc., which mark the disease before paralysis occurs.

3. I have not had an opportunity to make many blood counts early, but have made them in over thirty cases shortly after paralysis, when an abnormal number of lymphocytes is present in the blood. Can this, a preferable method, not be used to help in the diagnosis?

4. Without any basis for my belief except personal convictions, I do not believe even so inocous a procedure as lumbar puncture advisable in these extremely prostrated subjects with their infiltrative edema and hemorrhage of the cord and of the meninges.

Further, until a definite germ and serum or vaccine are determined I believe that physicians should observe great care to counteract flail joints, contractures and consequent deformity after the paralysis has occurred.

EDWARD E. MAYER, Pittsburg, Pa.

[The above letter was referred to Dr. Flexner, who replies:]

To the Editor:—The reason for recommending that lumbar puncture be performed in cases of doubtful infantile paralysis is in order to arrive at the earliest practical moment at a correct diagnosis. We are still very ignorant of the real extent of the epidemics of poliomyelitis and are therefore, prevented from exercising due caution in limiting its spread. What we need especially to learn is the frequency with which cases of poliomyelitis that do not develop paralysis occur, and what the leading symptoms are in these instances, since the so-called abortive cases may be found to be the insidious means of the transmission of the infection. Moreover, there occurs, not uncommonly, a form of anterior poliomyelitis which simulates epidemic meningitis so closely as to be frequently confused with that disease. I can speak with certain knowledge on this point because of the frequency with which we have been called on to supply antimeningitis serum for the treatment of cases of anterior poliomyelitis, in which meningitic irritation was an early and prominent feature.

I am of the opinion, therefore, that lumbar puncture provides the one clinical method at present known for clearing up the diagnosis of atypical cases of poliomyelitis or for determining the nature of the typical affection prior to the appearance of paralysis. Whether the increase in lymphocytes of the circulating blood will suffice for the same purpose I do not know, but the suggestion made by Dr. Mayer is valuable and should be carefully investigated. I do not believe, however, that it is necessary or desirable to defer employing lumbar puncture for purposes of diagnosis until a specific form of treatment is discovered. It would seem necessary merely to recall the great value of lumbar puncture as an aid to the diagnosis of tuberculous and some other forms of meningitis, for which there are at present no specific remedies, to justify the employment of the procedure.

The question as to whether lumbar puncture is likely to be abused in the hands of the unskilled and inexperienced is another matter. Our experience with the antimeningitis serum leads me to think that it will rarely happen that those unskilled or inexperienced will undertake to employ the puncture. Indeed, I should say rather that inexperienced physicians will call on surgeons or others who are familiar with the procedure rather than undertake to carry it out for themselves. It should be noted, furthermore, that in order to arrive at a diagnosis by this means, laboratory knowledge is required, since the fluid secured must be submitted to microscopic and chemical examination, a fact which, in itself, introduces a limitation that would tend also to confine the method to the skillful.

I believe, however, that Dr. Mayer's warning to exercise great caution so that a misunderstanding does not arise on the part of the friends of the patient, who might otherwise attribute the development of paralysis to the puncture, is timely, and I also agree with him in advising that the puncture be not carried out in instances in which there is danger of such misinterpretation.

In conclusion, I would like to add a word on a point foreign to this letter. Since the publication of my paper in THE JOURNAL, I have learned of the prevalence of epidemic poliomyelitis during the past summer in three southern states, namely, Virginia, South Carolina, and Georgia.

SIMON FLEXNER.

American Medical Association of Vienna

VIENNA, Sept. 26, 1910.

To the Editor:—No doubt a great many of the readers of THE JOURNAL, especially physicians who are contemplating coming to Vienna for graduate work, and also those who have studied here, will be interested in hearing that on September 21 the American Medical Association of Vienna left its old quarters in the Café Klinik, where it had been for six years, and moved into new and permanent club rooms at 28 Schlösselgasse, opposite the main entrance to the General Hospital.

The club rooms consist of five large, handsomely furnished rooms most conveniently located, and will fill a long-felt want among the physicians who come to Vienna. The lounging-room is furnished with large armchairs, leather-covered divans, piano, etc. The reading-room and library is done in red, and the secretary's or business room in green. A pretty room has been arranged for the ladies, not only for the use of those studying medicine, but also for the wives and daughters of visiting physicians. Beautiful rugs cover all the floors and handsome curtains adorn the windows. The color schemes in each room have been worked out carefully, everything is harmonious and in good taste, and the A. M. A. of Vienna now has a home in which its members take pride. The association is greatly indebted to Dr. C. L. Chambers of Bismarck, N. D., Dr. D. B. Phemister of Chicago, Dr. W. H. Burmeister of Great Falls, Mont., Dr. F. W. Barton of Danville, Ill., and Dr. M. W. Jacobs of St. Louis, as it was owing to their efforts that the club rooms were established. The association selected Dr. Chambers for the presidency at an election held September 9. A good reference library is in the process of formation; a number of valuable medical works have already been contributed, and it is hoped that in a short time all the leading medical journals will be found on the library table.

The club rooms were formally opened with a large reception on the evening of September 21, and it was attended by nearly five hundred guests, including American physicians studying in Vienna, people from the American colony, and the various professors and instructors in the hospitals.

The present officers of the association are: Dr. C. L. Chambers, Bismarck, N. D., president; Dr. N. L. Linneman, Duluth, Minn., vice-president; Dr. M. W. Jacobs, St. Louis, secretary; Dr. R. F. Davis, Seattle, treasurer.

H. F. BENNETT.

Interstate Reciprocity in License to Practice

To the Editor:—The subject of interstate medical reciprocity is perhaps trite but is one, I am afraid, which will constantly recur until it is settled right and to the satisfaction of higher-class graduates of from ten to twenty-five years' standing. At present the bulk of the state laws are entirely in favor of the inexperienced tyro and the compend brigade. I am thoroughly in favor of good, stringent laws calling for high preliminary and professional requirements and I do not think any older practitioner should expect reciprocity unless he has above the average attainments which were in vogue at the time of his graduation. It is not to be expected that any physician of many years' standing, no matter how good a school he came from or how good his previous education, can successfully complete a state board examination on those fundamentals which he has long since forgotten save in their more or less practical application. In my opinion, boards were created to keep poorly qualified men out, not to harass those in good professional standing.

The question might arise: "How are we to know those of good standing without examination?" In answer I would say: Any man who can show evidence of having had a good preliminary education at the time of commencing the study of medicine and having subsequently graduated from a standard medical college, so recognized at that time, should be permitted to practice anywhere in the country. Any other course, short of a practical examination in the practical subjects, is a tyranny against which the masses of the older practitioners should rise up. A physician, after years of practice, may want to change his location for many reasons, among which may be unsuitable climate, unsuitable surroundings, lack of success owing to undue competition or because he desires to take up a specialty which is precluded in his present location. Now, under such conditions, no man or body of men has the right to say to a competent man, as measured by the standard above laid out: "You cannot practice here until you go through any examination we may prescribe." Take the men of the highest standing and best reputations in this or other countries, put them to such a general test and they will "fall down." See the fuss some of the physicians and surgeons of St. Louis made when it was hinted that they be given a practical examination on the subjects in which they were supposed to be expert. If a lot of theoretical stuff had been suggested they might have had reason to complain. The young graduate is primed for such examinations and it is right that he should take them, but the older competent physician of from ten to thirty years' standing should be exempt from such ordeals. A man of such years has business and family cares which prevent his preparing for examinations and it ought not to be required of him.

Reciprocity as we have it to-day is not reciprocity at all and the older, qualified members of the profession should be recognized, peacefully if possible, but they should be recognized.

H. E. DUNLOP, M.D.

Grim Advocate of Death

To the Editor:—In the Department of Medical Economics, in THE JOURNAL, October 8, page 1313, is an article written in reply to Senator Webster Grim, whose statements were published in the *North American* concerning the Pennsylvania Board of Health. That a board of health, that medical research, that proper hygiene and sanitary work was very important to any state, all this was admitted by Senator Grim, but the expensive scale and the manner in which Pennsylvania was conducting the said work is what Senator Grim denounced. I desire to ask the writer of the above article in THE JOURNAL of the A. M. A. what amount of money he is now receiving either directly or indirectly from the Pennsylvania Board of Health.

J. M. JOHNSTON, M.D., Huntingdon, Pa.

[COMMENT:—We fear that our correspondent did not carefully read the article referred to, or he would have seen that the entire article, with the exception of the introductory paragraph, was quoted from an editorial in the Philadelphia *North American*. As to how much the writer of the article receives from the Pennsylvania Board of Health, we suggest that the question be referred to the editor of the *North American*.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DETAILS OF THE WASSERMANN REACTION

To the Editor:—Please give an explanation of the Wassermann reaction and the reason for the different steps.

D. I. W., Cincinnati.

ANSWER.—The Wassermann reaction rests on the phenomenon known as fixation of complement. The name "complement" has been given to a substance found in all animal serums. This substance is necessary for the action of the lytic antibodies which are formed in the blood by reaction against various pathogenic agents or antigens. An antigen is any substance capable of provoking the formation of an antibody. It is believed that complement combines with the antibody and the latter with the antigen, making the reaction of lysis possible. Thus a hemolytic substance in the presence of complement attacks and dissolves red blood cells, setting free hemoglobin and rendering transparent an opaque suspension of red blood cells by laking the blood. If no complement is present the hemolytic antibody will have no effect on the red cells and no apparent change in the blood mixture will take place. Complement is destroyed by heating and may thus be removed from serum containing it.

Bordet and Gengou showed that the union of the antibody with the antigen (infectious virus) removed complement from the serum. Wassermann applied this discovery to the diagnosis of syphilis on the following assumption: If syphilis is active the serum of the patient must contain antibodies and if syphilitic virus or antigen is added to such serum it will combine with these antibodies and with complement and remove the complement from the serum. Later investigations showed that the antigen need not be a specific syphilitic product, although such an antigen is best for use. To test whether complement has been combined, Wassermann employs a hemolytic system consisting of the serum of a rabbit which has been injected with sheep's red blood corpuscles until an antibody has been formed in the animal's serum which is hemolytic against sheep's red blood corpuscles. If the serum of such a rabbit be mixed with sheep's red blood cells the hemolytic agent in the serum, with the aid of the complement in the serum, will destroy the red blood cells and liberate hemoglobin. But if such a serum be heated before it is mixed with red blood corpuscles complement will be destroyed and the serum will no longer be able of itself to cause hemolysis. Such serum is said to be inactivated. because it can no longer act after complement is destroyed. If, to an inactivated hemolytic serum, a serum containing free complement be added, the mixture again becomes capable of causing hemolysis and by this means it becomes possible to determine whether a serum under investigation contains free complement or not.

In order to make a Wassermann test it is necessary first to put together a syphilitic antigen, a serum suspected of containing syphilitic antibodies, and a small amount of guinea-pig serum to furnish the complement. This mixture is incubated for a certain period (45 minutes) at 37 degrees C. At the end of this time if there are syphilitic antibodies in the suspected serum they will have combined with the antigen and with the complement so that there will no longer be any free complement in the serum. If this serum is now added to a mixture of sheep's blood corpuscles and inactivated hemolytic serum, no hemolysis will take place because complement has been removed. On the other hand, if the suspected serum contained no syphilitic antibodies no combination with the antigen will have occurred and complement will remain free, so that when sheep's corpuscles and hemolytic serum are added, the free complement will cause hemolysis.

A positive Wassermann reaction causes no change in the mixture of blood corpuscles and inactivated hemolytic serum, but in case of a negative reaction hemolysis occurs and the mixture of blood corpuscles and inactivated hemolytic serum becomes transparent and red from the liberated hemoglobin.

For the performance of the reaction the following are needed:

1. The syphilitic antigen obtained from syphilitic liver or extract obtained from the heart of the guinea-pig. These can be obtained ready prepared from certain laboratories. If made by a physician the organ should be ground with sand and warmed in a water bath at 60 degrees C. for an hour with 50 c.c. of 95 per cent. alcohol for each gram of the organ and filtered.

2. Guinea-pig serum to serve as a source of complement.

3. Hemolytic serum. Inject a 5 per cent. mixture of washed sheep's blood corpuscles into a rabbit every week or 10 days for 4 or 5 times. A week or 10 days after the last injection the blood may be removed from the heart, the serum collected, inactivated by heating at 56 degrees C. for half an hour, and kept on ice ready for use. This is also known as an amboceptor. It contains amboceptor (lytic antibody) but no complement.

4. Sheep's blood obtained from the jugular vein of a sheep in a sterile flask and defibrinated by glass pearls. It is washed with salt solution 2 or 3 times and then mixed with salt solution either in the proportion of 5 per cent. or 50 per cent., according as one adheres to the cubic centimeter plan or drop method for measuring quantities.

The blood serum of the patient to be tested is obtained as follows: Collect blood from the vein or finger, allow it to clot; remove the separated serum; centrifugate to clearness; pipette off into test tube and inactivate at 56 degrees C. for one-half hour.

Before the actual performance of a reaction it is necessary: (1) to standardize the amboceptor; (2) to see that extract alone does not bind complement or hemolyze sheep's corpuscles; (3) to see that the blood corpuscles have not hemolyzed; (4) to see that the complement is active.

The performance of the test is as follows: For each serum two small test tubes are required and several tubes for controls of the materials as above, these being repetitions of the tests of material made before beginning the test. Add 10 drops of salt solution to each tube. Add a drop of serum to each of the 2 tubes used for a given serum. Then add 2 drops of organ extract to one of them. To one of the control tubes add 2 drops of organ extract. To each add a drop of complement. Shake tubes and place in incubator for one hour. Remove and add to each a drop of standardized amboceptor and one drop of 50 per cent. suspension of sheep's

blood corpuscles. Incubate for an hour and a half and then read the result. All controls with serums alone, with normal serums and with organ extract alone should be hemolyzed. If hemolysis has occurred in tubes containing suspected serums and organ extract, they are regarded as negative. If hemolysis has not occurred at all, or only incompletely, the result indicates that the patient furnishing the serum is affected with syphilis.

A list of articles on this subject was published in THE JOURNAL, April 9, 1910, p. 1226.

HOUSEHOLD APPARATUS FOR DISTILLING WATER

To the Editor:—I desire information concerning apparatus for distilling water which may be used in the household.

1. Which is the best type of apparatus?
2. What general principles should such apparatus have?
3. Is distilled water used in the navy and on steamship lines?
4. Are there any serious disadvantages in the use of distilled water for drinking purposes?

CLEVELAND FERRIS, New York.

ANSWER:—1 and 2. Small stills for this purpose can be obtained of chemical supply houses and are usually constructed so as to conduct steam from the tea-kettle or other vessel into a worm surrounded by cold water by which the steam is condensed. Lead pipes and vessels should be carefully avoided. The tubing through which the steam passes should preferably be of pure tin.

3. We understand that distilled water is used in the navy and on some sea-going steamers, but not on steamers plying the Great Lakes.

4. It has been asserted that distilled water is injurious on account of its osmotic properties. Animal cells are unfavorably affected by it and it is supposed that the effect on the mucous membrane of the stomach may be unfavorable. As a matter of fact, however, distilled water is seldom taken into the stomach without the presence of solids, which increase its molecular concentration, and experiment has shown that when distilled water is taken into the empty stomach, solids are secreted from the blood so as to approximate the molecular concentration to that of the blood. Its moderate use, therefore, probably does no harm. The principal sanitary advantage of distilled water can be more economically obtained by simply boiling and filtering.

EXAMINATION OF WATER FOR COLON BACILLI

To the Editor:—Please answer the following questions:

1. In the examination of water for colon bacilli what is the ratio between the total number of bacteria and the number of *B. coli*?
2. Does the increase or decrease in number of fish influence the total number of bacteria? I refer to our lake fish.
3. (*a*) Is there any fish bacillus known which closely resembles the colon bacillus? (*b*) If so, how are they distinguished?
4. Can you refer me to any literature on the subjects of Questions 1 and 2?

F. W. LINN, M.D., Cleveland.

ANSWER:—1. In sewage, roughly speaking, about one-tenth of the colonies which develop on ordinary media belong to the colon group. In a relatively pure or uncontaminated surface water there may be only one colon germ to one hundred or even one thousand of other kinds. There is never any constancy of ratio.

2. No such effect has ever been traced. Migrations from polluted to unpolluted waters may possibly explain the occasional presence of *B. coli* in certain waters, since fish living in sewage-contaminated streams have been found to contain *B. coli* in the intestinal contents.

3. No. As stated above, typical *B. coli* have been found in fish inhabiting sewage-contaminated waters.

4. Consult Amyot: "Is the Colon Bacillus a Normal Inhabitant of the Intestines of Fishes?" *Transactions of the American Public Health Association*, 1901, xxvii, 400.

ACUTE INDIGESTION AND SUDDEN DEATH

A correspondent who notes the reference in this department on the above subject, August 20, 1910, calls attention to an article by Dr. Douglas H. Stewart of New York, in the *American Journal of Obstetrics*, vol. lix, No. 3, 1909. The subject of the article is "The Protection of the Accoucheur and His Patient," and the above subject is taken up in the last paragraph. Dr. Stewart believes that acute dilatation of the stomach is responsible for sudden death in pregnant women and states that he has seen two sudden deaths which he cannot attribute to anything else. He further says:

"Theoretically, in a pregnant woman the sudden expansion of the stomach between an immovable uterus and a partly movable heart may be imagined. I am now washing out all painful stomachs and carry a stomach-tube as part of my armamentarium for use at the first symptom of cardioventral disturbance. After an interval of quite characteristic pressure symptoms, varying from one to three hours, the tympanites becomes very marked, the patient gasps and gives up her life. If the patient has not been stripped and the abdomen examined, the accoucheur may be mortified and regretful. The whole matter may be summed up thus: If a pregnant woman has a dilated stomach with tension, pass the stomach-tube too early, for when the pressure effects show on the pulse at the wrist it will be too late. Never leave a tympanitic abdomen until the stomach-tube has been passed and there is a certainty that the stomach is not distended, for when death does occur it takes place with speed and without warning other than the symptoms of a 'little indigestion.'"

The Public Service

Medical Department, U. S. Army

Changes for the week ended Oct. 8, 1910:

Graham, George D., D.S., Sept. 15, reported for duty at Ft. Shafter, H. T.

Brown, Polk D., M.R.C., Sept. 28, left Ft. Sam Houston, Texas, en route to Ft. Logan H. Roots, Ark., for temporary duty.

Frick, Euclid B., lt.-col., will take charge of the office of the medical superintendent, Army Transport service, during the absence of Col. H. S. T. Harris, at Camp Atascadero.

Wells, F. M., R.C., granted leave of absence for two months, to take effect about Nov. 15.

Gapen, Nelson, capt., ordered to report on Oct. 15, 1910, to the commanding officer, Army and Navy General Hospital, Hot Springs, Ark., for duty.

Hanson, Louis H., capt., ordered to Ft. Hamilton, N. Y., for duty, on being relieved by Captain Gapen.

Ford, Joseph H., major, relieved from duty at Ft. Riley, Kan., and ordered to Ft. Wadsworth, N. Y.

Richards, Robert L., capt., granted leave of absence for four months, with permission to go beyond the sea, effective about Oct. 3, 1910.

Brown, Polk D., R.C., ordered to Ft. Logan H. Roots, Ark., for duty during the absence on leave of Major Robert N. Winn, medical corps, which takes effect about Oct. 1, 1910.

Sherwood, John W., R.C., will proceed to Ft. Strong, Mass., for temporary duty.

Davis, William B., col., granted leave of absence for two months, with permission to visit China and Japan.

Medical Corps, U. S. Navy

Changes for the week ended October 8, 1910:

Kennedy, J. T., surgeon, detached from the *Indiana* and ordered to the *Louisiana*.

Ohnesorg, K., surgeon, detached from the *Louisiana* and ordered to the *Virginia*.

Dennis, J. B., surgeon, detached from the *Virginia* and ordered to the navy yard, Philadelphia.

Gates, M. F., surgeon, detached from the navy yard, Philadelphia, and ordered to command the *Solace*.

Pickrell, G., surgeon, detached from command of the *Solace* and ordered home to await orders.

Lawrence, H. F., asst.-surgeon, ordered to Washington, D. C., for examination for promotion and then to wait orders.

Casto, D. H., P. A. surgeon, commissioned passed asst.-surgeon from July 12, 1910.

Hightower, C. T., acting asst.-surgeon, resignation accepted, to take effect Oct. 1, 1910.

Pratt, R. B., acting asst.-surgeon, detached from instruction at the Naval Medical School, Washington, D. C., and ordered to the marine recruiting station, Philadelphia.

Huff, E. P., asst.-surgeon, detached from the *New York* and ordered to the Naval Hospital, Canacao, P. I.

Hart, S. D., asst.-surgeon, detached from the *Albany* and ordered to the naval station, Olongapo, P. I.

Wickes, G. L., P. A. surgeon, ordered to the *New York*.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Oct. 5, 1910.

Banks, Charles E., surgeon, directed to assume temporary charge at Portland (Quarantine), Maine, during the absence of Surgeon J. M. Eager.

Eager, J. M., surgeon, directed to proceed to Naples, Italy, on special temporary duty.

Nydegger, J. A., surgeon, detailed to represent the service at the meeting of the Medical Society of the State of Pennsylvania to be held in Pittsburg Oct. 4-6, 1910.

Lavinder, C. H., P. A. surgeon, granted 7 days' leave of absence from Oct. 1, 1910.

Grubbs, S. B., P. A. surgeon, granted 14 days' leave of absence from Sept. 25, 1910, on account of sickness.

McClintic, T. B., P. A. surgeon, granted 7 days' leave of absence from Sept. 28, 1910, under paragraph 191, Service Regulations.

Rucker, W. C., P. A. surgeon, directed to proceed to Elizabeth, N. J., on sepecial temporary duty. Leave of absence for 10 days from Sept. 14, 1910, amended to read 7 days from Sept. 15, 1910.

Porter, Joseph Y., quarantine inspector, leave of absence for 30 days from Sept. 20, 1910, revoked.

Bean, L. C., acting asst.-surgeon, granted 5 days' leave of absence from Oct. 1, 1910.

Gustetter, A. L., acting asst.-surgeon, granted 6 days' leave of absence from Oct. 1, 1910.

Hallett, E. B., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 1, 1910.

McDaniel, S. E., acting asst.-surgeon, granted 14 days' leave of absence from Oct. 18, 1910.

McLarty, A. A., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 3, 1910.

Small, E. M., acting asst.-surgeon, granted 8 days' leave of absence from Oct. 3, 1910.

Tappan, J. W., acting asst.-surgeon, granted 20 days' leave of absence from Oct. 1, 1910.

Townsend, F., acting asst.-surgeon, granted 4 days' leave of absence from Oct. 6, 1910.

Wetmore, W. O., acting asst.-surgeon, granted 1 day's leave Sept. 19, 1910, under paragraph 210, Service Regulations.

Board of Medical Officers convened to meet at Stapleton, N. Y., Oct. 7, 1910, for the purpose of making a physical examination of a cadet of the United States Revenue Cutter Service. Detailed for the Board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. A. Korn, recorder.

Society Proceedings

COMING MEETINGS

Am. Assn. for Study and Prev. Infant Mort., Baltimore, Nov. 9-11.
American Association of Railway Surgeons, Chicago, October 19-21.
Hawaiian Territorial Med. Assn., Honolulu, November 26-28.
Ohio Valley Med. Assn., Evansville, Ind., Nov. 9-10.
Southern Medical Assn., Nashville, November 8-10.
Virginia, Medical Society of, Norfolk, October 25-28.

KENTUCKY STATE MEDICAL ASSOCIATION

Fifty-fifth Annual Meeting, held at Lexington, Sept. 27-29, 1910

(Continued from page 1309)

Officers Elected

The following officers were elected for the ensuing year: president, Dr. James G. Carpenter, Stanford; first vice-president, Dr. Joseph W. Pryor, Lexington; second vice-president, Dr. Byron E. Gianinni, Coalmont; third vice-president, Dr. David O. Hancock, Henderson; orator in medicine, Dr. William W. Anderson, Newport; orator in surgery, Dr. John R. Wathen, Louisville; delegates to the American Medical Association, Dr. Curran Pope, Louisville; Dr. William W. Richmond, Clinton, and Dr. Arthur T. McCormack, Bowling Green.

Paducah was selected as the place for holding the next annual meeting.

President's Address: Preventive Medicine

DR. J. E. WELLS, Cynthiana: Not all we have aimed at in public health problems has been accomplished, but our hopes have been realized in regard to medical education, and a higher degree of qualification is now required of those who are to become members of the medical profession. Medical societies have been doing work which has evidently been appreciated, as in the Kentucky State Medical Association the increase in membership since 1903 has been from 290 to 2,000. In view of all that has been accomplished in the method of prevention and treatment of such scourges as cholera and yellow fever, typhus and typhoid, scarlatina, diphtheria and epidemic meningitis, it needs little argument to prove the value of quarantine and of efficient medical inspection and protection. The conscientious physician of the present day is devoting his life not only to treating individuals who are already ill, but to combating epidemics. He does this by educating parents and children as to the prevention and spread of disease, and by impressing on them the need of clean and sanitary surroundings. In addition, he preaches the importance of pure food laws, the protection of the water supply, the extermination of parasites and disease germs, the protection of the sex relations, the future legislation of marriage and the crying need of a valiant fight against tuberculosis and other virulent and infectious diseases that are abroad in our land.

The public school should become the object of the physician's solicitude. Hygiene should be taught and a local physician elected as a member of the school boards, whose advice should be sought. Each county should have a paid medical inspector. The aim of modern education should be to foster the physical as well as the intellectual and moral development of the child. A good system of inspection and instruction would soon elevate the standard of our future citizens, as well as promote health and happiness. One of the most important things within the scope of the doctor's work is the part he can take in medical legislation. Three important bills became laws at the last session of the state legislature: the bill to appropriate $30,000 to maintain the State Board of Health, and the criminal abortion and the vital statistics bills.

We are proud of all that has been done, yet when we contrast this with what we wish to do, it creates a feeling of sadness among us. The spread of tuberculosis could be easily averted if state and county sanatoriums were established, and free dispensaries were maintained in smaller cities. The law against expectoration in public places should be made more stringent; laymen should be taught the dangers lurking in the public drinking cup and the communion cup; women should be urged to discontinue promiscuous kissing as a greeting, and the kissing of babies should be discouraged. The prevention of marriage between diseased and mentally deranged persons is not impracticable. The time may come when candidates for matrimony will have to produce certificates from physicians stating that they are free from all diseases and fit to perpetuate the race. The sex problem is perhaps the most far-reaching one of the age, and it lies with the physician to aid in solving it, as it is only to him such matters are confided. The world's idea of greatness has changed and it will change more. The great warriors who wore the laurel wreath because they had slain their thousands will not be comparable in greatness with the noble men of science who have laid down their lives for the advancement of the cause they loved.

Kentucky's Opportunity for Vital Statistics—How the Medical Profession Can Aid

DR. CRESSY L. WILBUR, Washington, D. C.: The value of the entire body of statistics collected by the state will depend on their completeness. Ninety physicians out of a hundred may comply with the law, and yet the total results for the entire state may be vitiated by the other ten who refuse or neglect to do so. If one leading physician in a community refuses to take the trouble to register his births, he will soon have imitators, who, very reasonably, will fail to see why there should be any discrimination of persons under the general statute; and in a short time, the whole registration law will become a farce. The remedy for such a condition is the prompt enforcement of the law, in all cases of known violation, and utterly irrespective of the social or professional prominence of the violators. Remember, such a violator of the act is overriding the law of the commonwealth for his personal convenience, impeaching the reputation of the profession for faithful observance of the legislation that it has itself urged, and, perhaps, working an irreparable wrong on the future of a helpless infant, from whose family he has taken money for discharging his proper professional service, which includes the registration of the birth. If any leniency is to be shown in such cases, it should be exhibited toward midwives, whose ignorance may account for neglect, and not toward enlightened physicians, whose knowledge of the scientific and sanitary uses of complete birth registration should render them less excusable for failure to comply with the provisions of a reasonable registration law. Nevertheless, the almost total lack of complete birth registration in the United States is due to the failure and neglect of physicians to observe such laws, and of other physicians, in the executive capacity of health officers, to enforce them. It is frequently true that midwives are much more particular about registering births than physicians. The remedy for this condition lies in the hands of physicians, and, starting out with a new organic law, it should be easy, through state and county organizations, to hold up the hands of the local registrars and of the state registrar in securing such a thorough compliance with the law for the registration of births, that the reproach now resting on the profession in this respect will be removed. It should not be said that physicians prescribe registration laws for others and refuse to obey them themselves. It should be considered professional misconduct to violate such statutes, and the county societies should take pride in scrupulous observance, by their members, of these necessary requirements.

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DISCUSSION

DR. W. L. HEIZER, New Haven: It is unfortunate that at present we have no term that would include the sum total of the loss by death, or the loss by sickness, and the mental suffering entailed by diseases that are preventable and that are not prevented. The striking feature of Dr. Wilbur's paper is that only 53 per cent. of the area of the United States is a registration area. In the last analysis it is unquestionably proved that the preservation and perpetuation of human life is the most important factor to be considered. This is true, whether we consider it from the personal, social, state or national standpoint.

DR. W. W. RICHMOND, Clinton: The importance of vital statistics has never been fully appreciated by the average physician. It has been generally regarded a matter of curiosity and satisfaction, belonging chiefly to the statistician as a record for reference, with no direct personal benefit to the public. The prevention of disease and premature death depends largely on the successful operation of a law of vital statistics. A recognized nomenclature is very important, little less than necessary in the operation of the law, and thanks to the American Medical Association, which has brought so many blessings, the great need will doubtless be supplied.

DR. WALTER BYRNE, Russellville: That Kentucky has been one of the first Southern states to enact laws, to gather and compile such valuable assets, is very gratifying, and the enforcement of these laws bearing on vital statistics should be the duty of each and every physician in the state.

The Necessity for Properly Selected and Compensated City and County Health Officers

DR. J. N. MCCORMACK, Bowling Green: As previous legislation had made the other health machinery almost perfect, on paper at least, the possibilities for practical life-saving work in every county and community are limited only by the extent to which the local fiscal authorities and people will co-operate in it. It should be known, however, that even with this advanced legislation and liberality there is little promise in this field in any county which does not have a well-trained health officer who can devote his entire time to the duties of his office. In order to make it easier to bring this about, and in the interest of both efficiency and economy, it is suggested that, except in cities of the first class, systematic efforts be made to combine the city and county health offices, so that both may be held by the same person. It should not be a political office, and the tenure should depend on the betterment of sanitary conditions, as shown by a steady decrease in the sick-rate and death-rate. As no one can be a health officer of the kind for which I am pleading and practice medicine, the salary should be such as is given to circuit judges and other officials in whom a high order of capacity and unceasing devotion to duty are required. In fact, it would be just as reasonable to expect judges to support themselves by the practice of law while serving on the bench, as to expect health officers to do their far more important and exacting work, requiring the highest order of training and judgment, and to practice medicine at the same time. Let us no longer deceive ourselves, or permit the people to be deceived, about a matter so vital to them. Until we can have a health officer in each county and city so selected and supported that he can afford to qualify himself fully for it, and make the prevention of sickness his life work, most of what this board and the medical profession stand for is but an idle dream in that jurisdiction. It should be known, too, that all this is even more important to country people and to those of small towns than to the residents of cities. Necessity forces the latter to some observances of the laws of health and, in consequence, the preventable sick-rate and death-rate is much lower with them than with the farmers, who ought to be the healthiest people in the world.

DISCUSSION

DR. JOSEPH M. MATHEWS, Louisville: Dr. McCormack pleads for a well-trained health officer in each county, who can devote his entire time to the duties of his office. There is but one way to bring about this ideal state of affairs, namely, select the proper man, let him become educated in health affairs, and then compensate him for his labor.

DR. J. G. CARPENTER, Stanford: The health officer should be paid for his services, and the ignorance of the public is the reason that these officers have not been paid in the past. The people do not understand the great financial problems that are confronting them. They do not understand the great taxation we are subjected to from time to time; hence it is necessary to educate them in regard to the efficiency of boards of health and what can be accomplished by them.

DR. W. W. ANDERSON, Newport: As a united profession, let us make it unpleasant for the health officer who is a petty politician, who procures and holds on to his job on this account, and then we shall be able to get men who are sanitarians; or let us make sanitarians out of men we have.

DR. B. W. SMOCK, Louisville: No health officer can do good service and attend to a general practice any more than a physician can divide his time between the practice of medicine and the duties of a minister of the gospel. I have learned one very important fact from experience, and that is that a man is paid according to his ability for the work performed and the results obtained. The services of a good health officer are more valuable to the people than those of the circuit judge.

The Nature and Treatment of Splenic Anemia

DR. B. E. GIANNINI, Coalmont: The employment of drugs for the permanent or temporary relief of splenic anemia cannot be said to have been such as to inspire confidence in our ability to cope with the affection by that class of weapons. Still one reliable author (Taylor) has obtained temporary relief in the simultaneous administration of arsenic, potassium iodid and oxygen gas to the amount of 30 liters daily. The conservative physician will always follow paths that others have found to lead to desirable ends, and I hold that patients treated medically should be given potassium iodid and arsenic, while the inhalations of oxygen should be persevered in. Fowler's solution should be given in doses of 7 minims after meals, while potassium iodid is to be taken in doses of 5 grains in solution an hour before meals. I have great faith in the action of oxygen inhalations, and the patient should, in all cases, receive 30 liters daily.

DISCUSSION

DR. S. R. YORK, Center: I have seen only one case of splenic anemia. The patient was a colored man, aged 65, well developed, weighing about 180 pounds, and living in a malarial district in Tennessee. His previous health had been good. He complained of weakness, and of a large tender spleen. I thought that he had chronic malaria, and put him on quinin, iron and arsenic, but his disease went on, until I thought there was some malignancy about the case. At last he had purpuric spots and hemorrhages from the gums and stomach, when a true diagnosis was made, as we thought; death occurred in about two months after the appearance of the hemorrhages.

DR. J. T. MCCLYMONDS, Lexington: I have seen two cases in the last ten years in Lexington. One patient, sent to me with a diagnosis of ulcer of the stomach, had had six hemorrhages, none being under 800 c.c. A diagnosis was not made. None of the symptoms of ulcer of the stomach was present, but an exploratory incision showed the entire mucus membrane of the stomach covered with small hemorrhagic points. The spleen was about one-third larger than normal. It showed a good deal of scarring and many adhesions. These adhesions were broken up; but a diagnosis was not made until two days after the operation, and it was hoped that starting up collateral circulation would have some effect on the disease. The patient died in a month following the operation.

DR. FRANK BILLINGS, Chicago: There are reports of cases on record in which the patients suffered from all the typical signs of splenic anemia, and in which thrombophlebitis, either of the splenic or portal vein, was the primary lesion. This was first written about by Dr. George Dock and by Dr. Warthin. Splenomegaly of the primary form, or splenic anemia, has no distinctive blood picture, except that there is a smaller percentage of hemoglobin than of the red cells. Usually, unless there is some infective process going on at the

same time, the white cells are small in number, and not large. There is a tendency in many patients to pigmentation of the skin, and at the same time these patients are apt to have other points or areas of the skin in which the pigment disappears. I have had several patients showing that feature. Hemorrhage from the stomach is due, in all probability, to the congestion of the splenic vein.

(To be continued)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty-third Annual Meeting, held at Syracuse, N. Y., Sept. 20-22, 1910

(Concluded from page 1313)

Puerperal Wound Intoxication and Wound Infection; A Historical and Critical Review of Childbed Fever

DR. HENRY SCHWARZ, St. Louis: Isolated cases of puerperal fever have occurred at all times among civilized nations, but the epidemics of this disease appeared with the advent of lying-in hospitals and they became more dreadful when frequent necropsies were made in search of the cause. Oliver Wendell Holmes, in 1843, pointed out the contagiousness of puerperal fever and the means for preventing it. Semmelweis, in 1847, insisted on the same points, and demonstrated the correctness of his views by reducing the mortality from childbed fever in his Vienna clinic.

The medical profession of the United States has almost forgotten that Holmes has equal, if not greater claim, to be remembered as the discoverer of the nature of puerperal fever. Most text-books do not mention him, while they do justice to Semmelweis; the one pleasing exception is that of Barton Cooke Hirst.

At present the medical profession is fully acquainted with the nature of puerperal infection and with the means which will absolutely prevent it. In well-managed institutions, infection has been driven out, but nevertheless thousands of young mothers die yearly in the United States whose lives could be saved. The cause lies partly in the inadequate obstetrical training which the medical schools until recently provided; this cause, however, is now rapidly disappearing.

The principal cause lies in the fact that throughout the United States in the large cities the greater part of the obstetrical work is done by midwives, and that, with few exceptions, no laws exist regulating the practice of midwives. Such laws should be enacted and the schools for midwives should be under control of state boards. In Missouri, Louisiana, Ohio, Wyoming, Utah and the Philippine Islands, the laws provide for examination and registration, but not for control of these schools. Maine and Mississippi especially declare that their medical practice acts do not apply to midwives; the law of Mississippi says: "Females engaged in the practice of midwifery are not prohibited from such practice, but are entitled to engage therein without a license."

Serotherapy and Bacterial Vaccines in Puerperal Septicemia

DR. HENRY SCHWARZ, St. Louis: Since 1895, I have used the various antistreptococcus serums in cases of severe acute puerperal sepsis, which seemed hopeless under other forms of treatment. In the first case, in 1896, one of severe pyemia, the patient recovered; no bacteriologic diagnosis had been made. In all other cases cultures made from the blood proved the presence of streptococci; every patient died. When bacterial vaccines were recommended in acute infections, I not only considered such treatment hopeless and illogical, but feared that it would injure the reputation of vaccines in their legitimate field. In acute streptococcus infections billions of streptococci are found in the blood; they die by millions and their bodies are dissolved, liberating thereby the endotoxin. The formation of antibodies under such conditions is very feeble or at a standstill; to inject millions more of dead germs, with their endotoxins, shows as much sense as the injection of morphin into a patient dying with morphin poisoning. To prove my contentions, I caused to be undertaken a series of experiments on rabbits, which prove the following points:

1. Vaccination after inoculation has no influence on the infection; all animals died in three days, the same as the control animal.
2. Vaccination simultaneously with inoculation has no influence on the infection; all animals died in three days, the same as the control animal.
3. Prophylactic vaccination produces immunity, but it must extend over a considerable period and vaccination must be stopped ten days before inoculation.

Intraperitoneal and intravenous vaccination prolonged the duration of the infection, so that animals so vaccinated died two days later than the control animal. Subcutaneous vaccination alone is effective and animals vaccinated every four days, from July 24 to August 28, and inoculated September 7, remained well, while the control animal died in three days. Excessive vaccination (from 50 to 200,000,000 in average weight animals) produced no ill-effect beyond a temporary refusal of food. The experiments are being continued.

Eight Cases of Acute Hemorrhagic Pancreatitis

DR. JOHN W. KEEFE, Providence, R. I.: These cases are of interest from several standpoints. Two patients recovered, 2 were operated on twice, 1 was operated on for acute hemorrhagic pancreatitis and 1, one-half year later, was again operated on and 4 gall-stones removed from the gall-bladder. Dr. Gile of New Hampshire reports a similar case. He operated for acute hemorrhagic pancreatitis and his patient was operated on about one year later by Dr. Irish and a number of gall-stones were removed. Another patient in this series was operated on for acute hemorrhagic pancreatitis and some months later a pancreatic cyst was removed. The events were reversed in one of the cases: 32 gall-stones were removed, but a stone was left in the common duct. Some months later the patient died from acute hemorrhagic pancreatitis. We should keep in mind the close relationship between infection of the bile passages and disease of the pancreas. While we should strive to make more accurate diagnoses in lesions of the upper abdomen, in obscure conditions, we should not delay but should operate early, as most of the conditions that simulate pancreatic disease require surgical interference.

Two Cases of Perforated Gastric Ulcer Causing Peritonitis

DR. T. B. NOBLE, Indianapolis: The pathology and symptomatology are analogous to perforation of any hollow viscus of the abdomen. The diagnosis must depend on the recognition of a demonstrable peritoneal insult, as evidenced by sudden, severe pain about the umbilicus or epigastrium, with local tenderness, followed by vomiting and the general symptoms of shock. Careful inquiry reveals a period of gastric disorder antecedent to the acute attack. Symptoms of acute peritonitis, more or less general in character, rapidly ensue, and it may be that they will overshadow all others at the time of observation, as happened in his first case. The vomiting of general peritonitis due to other causes has been continuous in my experience. But in these cases it occurred only once, and that very early at the time of perforation. It was not present in either case during the progress of the peritoneal inflammation.

Public and Private Hospitals

DR. JOSEPH PRICE, Philadelphia: Hospitals are extremely important in the education of young physicians and nurses, and in the clinical instruction of practitioners. The private hospital is largely responsible for the important specialties, and I value it most highly for the good work it has done along special lines. In the great medical educational centers—New York, Boston, Baltimore, Philadelphia, Chicago and New Orleans—the specialties should be advanced. If it is necessary for any one to have his wife or child operated on, the best is bad enough in the most refined specialty that we have. We should aim at that refinement of knowledge and skill that obtains in the treatment of diseases of the eye or in other special lines of work.

Cesarean Section

DR. J. H. CARSTENS, Detroit: Mrs. M., aged 40, mother of three children, widow for 10 years, married again one year

ago; she grew very fleshy. She became pregnant and toward the end it was found that the uterus was in a hernial sac and the abdomen pendulous, hanging down to the knee. On vaginal examination the uterus could not be felt. It was pulled up. Cesarean section was resorted to and followed by a smooth recovery.

High Operation vs. Cesarean Section

DR. WILLIAM H. HUMISTON, Cleveland: I believe that Cesarean section should be substituted for the high-forceps operation, which is attended with a mortality to the mother of 10 per cent. and to the child of nearly 21 per cent. The technic employed in the modern Cesarean operation has been so perfected, and the indications for the operation so widened that it is now frequently resorted to in order to give both mother and child greater chances for life. The rapidity with which this operation can be safely performed by an experienced abdominal surgeon is an important factor. Modern aseptic technic and favorable surroundings are essential and will insure practically a *nil* mortality, provided the mother has not already been infected by repeated examinations and efforts to deliver. In all cases in and near a city or town in which hospital accommodations are modern, the patient should be transported to such an institution for operation and convalescence. Many practitioners throughout the United States resort to the use of forceps needlessly, and are not impressed with the fact that the high-forceps operation is a major one, that it requires the hand of an expert obstetrician and a trained mind to avoid serious if not fatal injury to the mother and the sacrifice of the life of the child. Many physicians resort to the high-forceps delivery who would not think of undertaking a Cesarean section. If a physician did, and his technic was as careless as in the high-forceps operation, his mortality would be appalling. The general practitioner should not resort to the high-forceps operation without consultation with and the aid of an expert obstetrician.

Cesarean Section by the Small Median Incision Above the Umbilicus

DR. A. B. DAVIS, New York: Of the 78 Cesarean sections performed by me, the first 3 were done in tenements; the uterus was removed. Since Aug. 12, 1903, I have done the operation 75 times, and in no instance has the uterus been removed from the abdomen. Beginning with Case 4, a much smaller incision was used, half above and half below, and to the left of the umbilicus. In the 7 cases following this one, I gradually made the incision smaller and carried it higher up; until, Nov. 20, 1904, I, so far as I know, first independently conceived and practiced the small, high median incision, entirely above the umbilicus, in a woman, the twelfth in my series, being the second Cesarean section on this woman, the same as in Case 4. More than 2 years after this date the following allusion to the high incision was brought to my attention in Blundell's Midwifery, published in 1842. He says:

> Some might think, perhaps, that in removing the fetus by the Cesarean incision we ought to make the opening above the navel instead of below. . To this opinion, however, I can by no means accede; for if we make the incision above the navel the intestines will protrude more copiously, the region of the placenta will most probably be divided and on the abstraction of the ovum the uterus collapsing into the pelvis will sink below our reach, disappearing beneath the intestines, which fall over it. Place the incision, therefore, below the navel; by this collocation you will avoid these impediments.

Except in very recent writings, this is the only mention of the high incision above the umbilicus known to me. There is no reason why this operation should be singled out from all others as one which must be performed in great haste. It should be done with the deliberation called for in any other abdominal operation. There is great danger in doing otherwise. Several times I have found the intestines in front of the uterus; once it was injured. The incision should be long enough to allow easy delivery of the child, but the abdominal wall at this point in the full-term woman is thin and stretches easily. The small, high incision does not allow easy exposure or escape of the abdominal contents. Not infrequently all that we see is the uterus and a small portion of omentum. This wound is away from the site of greatest strain on the abdominal wall, at a point reinforced by the recti muscles as they approach each other toward their upper attachments. It is small. I have never seen hernia following it. The liability to adhesion between the abdominal wound and the uterine wound is greatly diminished.

Secondary Repair of Complete Perineal Lacerations; Technic and Results

DR. E. J. ILL, Newark, N. J.: There are still many failures resulting from repair of complete laceration of the perineum. My first operation after the method to be detailed was done Feb. 1, 1891. The patient in a doubtful case of improvement had perfect retention power within a few months. Altogether, 56 cases showed remarkable and uniform success; 26 were complicated by other operations. In my operations I followed the principle laid down by Sanger as the Tait operation in 1887. The operation is essentially a flap-splitting operation, and can be divided into six distinct steps: (1) the incision; (2) the flap splitting; (3) suture of the rectum; (4) suture of the perineum; (5) suture of the vagina; (6) twisting of perineal sutures. Careful attention should be given to the bowels, and the diet should be free from residue as possible. Thorough aseptic conditions before, during and after operation should be had. I operate under constant irrigation. The finger should touch neither the wounded tissue nor the rectum; all handling of tissue should be done by sterile instruments. Incisions are H-shaped, beginning at a point just outside of the orifice of Bartholin's gland, extending downward and backward, just outside of the retracted sphincter. The cross-bar of the H is carried exactly across at the mucous membrane of the rectum and vagina. Two flaps are formed, an anterior and posterior, the posterior one denuding the ends of the torn sphincter. The suture of the rectum is done with the finest catgut in the denuded tissue of the posterior flap. I prefer silver wire for the perineum. Three sutures take care of the sphincter. The fifth step consists of suturing the anterior flap of the vagina. Exactness must be exercised in coaptation of the wound when twisting down the sutures of silver wire. These sutures are cut on the ninth day. The after-treatment consists of moving the bowels in 48 hours, preceding the act of defecation by a sweet-oil injection. It is best to have the first movement with the patient on the left side, the nurse supporting the newly made perineum. Urination is usually normal. The patient should be well aware of her retention powers at the time the sutures are removed.

Intussusception in Infants

DR. HERMAN E. HAYD, Buffalo: This condition is much more common than is usually accredited, owing to ignorance and carelessness in making first examination. The diagnosis should be made early, as the symptoms and history are frank and dramatic in their onset. Too much importance is placed on the presence of a sausage-shaped tumor. Treatment is surgical and the mortality increases the longer the operation is delayed. Injections, irrigations and insufflations are too uncertain to be practical and scientific, but in recent cases they are often of value in assisting subsequent reduction after the abdomen is opened. The operation should be done quickly and no time should be lost in fruitless manipulations of the bowels. It is better generally to eviscerate at once and reduce the mass outside, than try to effect its reduction within the abdomen. Contrast the terrible mortality of appendicitis and extrauterine pregnancy of 25 years ago under medical treatment with the splendid results of to-day, due in no small measure to the work and teachings of this society, and we must not rest content until the same claim can be made for intussusception in infants.

Conservatism in Operations on the Uterine Appendages

DR. LEWIS C. MORRIS, Birmingham, Ala., read a paper on this subject, in which he drew the following conclusions:

1. No woman under 40 should have all of both ovaries removed except in the presence of tuberculosis or cancer.
2. Resection or amputation of diseased parts and plastic work on the tubes will occasionally be followed by conception.

3. Even in the presence of infection and more or less involvement of both tubes and ovaries plastic work, followed by pelvic drainage and the Fowler position, may be followed by regeneration.

4. Radical or sacrificial surgery and conservative or conservation surgery have about the same mortality but a vastly different morbidity.

5. Occasionally a secondary operation may become necessary which might have been avoided by doing radical work.

Intravenous Injection of Magnesium Sulphate in Bacteremia

DR. R. R. HUGGINS, Pittsburg, Pa.: In the study of drugs causing hyperleukocytosis, it was determined to find out, if possible, whether magnesium sulphate might act in this manner when administered intravenously. After a careful study in both rabbits and the human, it was decided that it did not produce a regular increase in the leukocytes when thus administered. During this study a number of intravenous injections were administered to human beings, and it was determined that the drug could be given intravenously without any apparent harm to the patient. Experiments show that a 1 per cent. solution in a normal saline solution will not produce hemolysis of the human blood. It will not precipitate the globulins when given in this dilution, nor have I seen any effect on the specific gravity of the urine. It was decided that 30 grains of magnesium sulphate in 8 ounces of normal saline solution could be safely administered intravenously to the average individual. It must be given slowly into the vein at a temperature of from 105 to 108 F., the time occupied in allowing this quantity to run into the vein being 20 minutes. If allowed to flow into the vein rapidly respiration becomes embarrassed and the patient complains of heat all over the body. It has been given in this manner 50 times either by me or by my assistants, and the result in many instances has been gratifying. It has been given at intervals of 24 hours for several days. It was during this study that it was determined to try the use of this drug in a patient suffering from puerperal infection. In a number of cases which were beginning a typical course, similar to that in patients who died in spite of all treatment, the patients have been treated by intravenous injections of magnesium sulphate with apparent benefit. Its use has been limited almost entirely to the treatment of puerperal infection, and the number of cases treated are too few to draw any conclusions.

Fibromyomata of the Uterus, Complicating Pregnancy, Labor and the Puerperium

DR. R. W. LOBENSTINE, New York, read a paper which was based upon a study of one hundred cases occurring at the New York Lying-In Hospital. The chief deductions from this series of cases are:

1. A myomatous condition of the uterus predisposes to sterility. Parvin states that while the average sterility is 1 in 8, it is 1 in 3 in women with myomata. Charpentier's figures correspond closely to these.

2. The tendency to abortion is increased. In the bad cases, both spontaneous and artificial abortion may prove difficult to handle by the natural channel and most dangerous to the life of the individual. In the severe cases in which it is difficult to gain access to the cavity of the uterus proper, and in the presence of real hemorrhage, laparotomy is the operation of choice.

3. The majority of the patients who do not abort early proceed through pregnancy, labor and the puerperium with few or no symptoms; therefore, operative interference is rarely indicated during pregnancy and is as a rule meddlesome midwifery. This statement is made cautiously, as in the minds of many it will be open to criticism. The operation of myomectomy during pregnancy is just now very popular, but it is rarely indicated. The results of myomectomy are none too good. Consider, for instance, the report of Carsten's 150 cases: The operations were performed before the seventh month. There were 22 abortions; 13 deaths. Occasionally it may be wise to do a myomectomy, and occasionally necessary to do hysterectomy, but as a rule conservatism should be the watchword.

4. Nature accomplishes wonders at the time of labor, overcoming any apparent dystocia, in a large percentage of cases; when delivering avoid all possible trauma to the tumor.

5. Finally, with the development of the symptoms of gangrene in a myoma, in the puerperium, operate early, to save the life of the patient.

Puerperal Eclampsia

DR. E. G. ZINKE, Cincinnati, read a paper on this subject, in which he gave a brief analysis of ninety cases of puerperal eclampsia, and a critical review of the treatment of this disease. He drew the following conclusions:

1. Not all cases of puerperal eclampsia are alike; much depends on the extent to which the kidneys and liver are involved. The so-called malignant form, as the term implies, is fatal from the beginning; the so-called benign variety ends in recovery, sometimes in spite of the treatment adopted. The variety of mean gravity is without doubt favorably influenced in its course by careful and judicious treatment.

2. The prognosis for both mother and child is much worse when the convulsions supervene during pregnancy, the maternal mortality ranging from 35 to 50 per cent., and the fetal mortality from 65 to 75 per cent. The prognosis of intrapartum convulsions is more favorable, maternal as well as fetal, and amounts to about 25 per cent. The maternal mortality of postpartum convulsions is as a rule about 7 per cent. In my experience, having had but 2 cases, it is 50 per cent.

3. The most important treatment of puerperal convulsions is prophylaxis before the appearance of symptoms as well as before the eclamptic attacks when prodromal signs exist. The patient must be protected from injury during the convulsions and the duration and frequency of the paroxysms should be controlled and abbrevlated, medicinally rather than surgically. Veratrum viride in sufficiently large doses is the remedy *par excellence* to reduce the blood-pressure and the pulse frequency. Hot baths and hot packs judiciously employed, and free but not excessive catharsis, strict milk diet, and the recumbent position are of almost equal importance.

4. Chloral in large doses by rectum, if the patient is very restless during the interval of the attacks, is a good remedy. Chloroform inhalations, especially if of long duration, should be regarded as a source of great danger. The same may be said of frequent and large doses of morphin, both of these drugs having their ardent advocates.

5. Antitoxin treatment may play an important part in the future in the treatment of eclampsia.

6. Saline solution and sugar water instillations can do no harm and may do a great deal of good.

7. If, of late years, the maternal mortality of puerperal eclampsia has been reduced at all, it is the direct result of careful prophylaxis and intelligent medical care. Surgery has contributed nothing to it. The dictum, "assist in labor, but do not induce it," or "treat the convulsion and let the pregnancy take care of itself," is better than the dictum, "empty the uterus as soon as possible in every case of puerperal convulsions, no matter what the period of gestation."

8. Decapsulation of the kidneys, manual, balloon and instrumental dilatation, especially the old-time accouchement forcé, are in my opinion hardly justifiable, and should have no place in the treatment of puerperal eclampsia.

9. If, however, the symptoms are very threatening and the medical care above described fails to bring about prompt amelioration in the patient's condition, an early delivery may be desirable. If the patient be near term, but not in labor, the conservative Cesarean section should be selected. If the patient is just within the period of viability, vaginal hysterotomy is the proper procedure. If the fetus is not viable, before the end of the sixth month of gestation, deep cervical incisions will easily relieve the uterus quickly of its contents.

10. No one has a right to perform any of these three operations unless experienced and familiar with the technic of each. And in every instance the patient must have the benefit of strict asepsis. Without these requirements it is best to rely entirely on the medical care above outlined.

Pelvic Reflexes

DR. ROBERT T. MORRIS, New York: In a certain proportion of patients with pelvic reflexes, there is the neurotic habit. These patients are neurasthenics. If a surgeon takes out one ovary for the pelvic pain the patient is just as badly off as before the operation. If the other ovary is removed she is just the same. The surgeon must deal with neurotic patients with a great deal of intelligence. They represent a class calling for surgery, but the surgeon should beware of patients with pelvic pains, ovarian and tubal troubles, and neuralgic pains, particularly those of the neurotic or neurasthenic type. We have a group of disturbances proceeding from a scar of the cervix. Most women who have borne children have torn cervices. Does the cervix require operation for its repair? Do we do the right thing if we operate because we find tears and scars? No. We are not to operate in such cases unless we have definite reasons for doing so. If one should press on a scar of the cervix with the finger nail or with the sharp point of a retractor and bring out instantly that reflex, then the case is one requiring operation for reflex disturbance, but, if one should press on a scar and the patient does not know it, or if one should press on another scar and the patient does not know it we should not operate in that case for relief of reflex disturbances, no matter how much the cervix is torn. One may operate for repair of a torn cervix on general mechanical principles, but not for the purpose of relieving the efferent reflex.

Other Papers Read

The following papers were also read: "Tumors of the Bladder," by Drs. J. F. Erdmann and J. F. McCarthy, New York; "Adenocarcinoma of the Kidney," by Dr. J. G. Sherrill, Louisville; "Torsion of the Great Omentum," by Dr. W. J. Gillette, Toledo, O.; "Two Right-Sided Femoral Hernias in the Same Patient," by Dr. N. S. Scott, Cleveland, O.

State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 8-9. Sec., Dr. F. T. Murphy, Brinkley; Eclectic, Little Rock, November 8-9. Sec., Dr. G. A. Hinton, Hot Springs.

CONNECTICUT: Regular, City Hall, New Haven, November 8-9. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, November 8. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, November 8. Sec., Dr. Thomas S. Hodge, 19 Main St., Torrington.

FLORIDA: Palatka, November 9-10. Sec., Dr. J. D. Fernandez, Jacksonville.

ILLINOIS: Coliseum Annex, Chicago, October 19-21. Sec., Dr. James A. Egan, Springfield.

LOUISIANA: Regular, New Orleans, October 18-19. Sec., Dr. A. B. Brown, 108 Baronne Street; Homeopathic, New Orleans, November 7. Sec., Dr. John T. Crebbin, 1207 Maison Blanche Building.

MAINE: City Council Rooms, Portland, November 8-9. Sec., Dr. Frank W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, November 8-9. Sec., Dr. Edwin B. Harvey.

NEBRASKA: State Capitol, Lincoln, November 9-10. Sec., Dr. E. Arthur Carr, 141 S. Twelfth Street.

NEVADA: Carson City, November 7-9. Sec., Dr. S. L. Lee.

NEW JERSEY: State House, Trenton, October 18. Sec., Dr. H. G. Norton.

TEXAS: Palestine, November 22-24. Sec., Dr. R. H. McLeod.

WEST VIRGINIA: Morgantown, November 14-16. Sec., Dr. H. A. Barbee, Point Pleasant.

Louisiana Homeopathic May Report

Dr. John T. Crebbin, secretary of the Louisiana Homeopathic Board of Medical Examiners, reports the written examination held at New Orleans, May 2, 1910. The number of subjects examined in was 9; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 2, both of whom passed. Three candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College.	Year of Graduation.
Chicago Homeopathic Medical College	(1897)
Pulte Medical College, Cincinnati	(1897)

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Hering Medical College	(1903)	Missouri
Hahnemann Medical College and Hospital, Philadelphia, Virginia; (1908) Pennsylvania.	(1904)	

Mississippi May Report

Dr. S. H. McLean, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, May 10-11, 1910. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 192, of whom 59 passed, including 31 non-graduates and 133 failed, including 87 non-graduates and one osteopath. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined.
University of Alabama	(1910)	1
Howard University, Washington, D. C.	(1902)	1
University of Louisville	(1910)	1
Tulane University of Louisiana	(1910)	2
Mississippi Medical College	(1908) (4, 1910)	5
Albany Medical College	(1861)	1
University of Pennsylvania	(1907)	1
Vanderbilt University	(1909) (1910)	2
College of Physicians and Surgeons, Memphis	(1910)	2
Memphis Hospital Medical College	(1910)	6
Meharry Medical College	(1909)	1
University of Tennessee	(1907) (1909)	2
Universities of Nashville and Tennessee	(1910)	1
Medical College of Virginia	(1899)	1
University of Virginia	(1905)	1

FAILED

Harvey Medical College, Chicago	(1897)	1
Tulane University of Louisiana	(1910)	2
Baltimore Medical College	(1893)	1
Mississippi Med. Coll.	(1908) (2, 1909) (8, 1910)	11
St. Louis College of Physicians and Surgeons	(1908)	1
Memphis Hospital Medical College (1894) (1907) (2, 1908) (2, 1909) (9, 1910)	(1891) (1906)	17
Universities of Nashville and Tennessee	(1910)	7
University of the South	(1903)	1
College of Physicians and Surgeons, Memphis	(1910)	2
University of Nashville	(1902) (1906) (1909)	3
Meharry Medical College	(1907) (1908)	2
Knoxville Medical College	(1908)	1
Gate City Medical College	(1906)	1

Michigan June Reports

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examinations held at Battle Creek and Ann Arbor, June 14-16, 1910. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and at least 50 in each subject.

At the examination held at Battle Creek, the total number of candidates examined was 9, all of whom passed. The following colleges were represented:

PASSED

College.	Year Grad.	Per Cent.
American Medical Missionary College	(1904)	84.5; (1910) 79.2, 84.6, 85.3, 85.7, 86.8, 87.5, 88.2, 89.7.

At the examination held at Ann Arbor, the total number of candidates examined was 75, of whom 74 passed and one was conditioned. The following colleges were represented:

PASSED

College.	Year Grad.	Per Cent.
Chicago Homeopathic Medical College	(1878)	90.5
American Medical Missionary College	(1905)	78.4
Louisville Medical College	(1902)	79.2
Harvard Medical School	(1910)	87.4
Detroit College of Medicine	(1903)	77.3
University of Michigan College of Medicine and Surgery	(1910)	78.4, 78.5, 78.7, 79.2, 79.3, 79.8, 80, 80.1, 80.1, 80.2, 81, 81.1, 81.1, 81.5, 81.5, 81.7, 81.8, 82.5, 82.5, 82.6, 83, 83.1, 83.5, 83.6, 83.8, 83.9, 84.1, 84.1, 84.3, 84.4, 84.5, 84.6, 84.6, 84.7, 84.8, 84.8, 84.8, 85, 85.1, 85.2, 85.2, 85.3, 85.4, 85.4, 85.5, 85.9, 85.9, 86.1, 86.1, 86.5, 86.7, 87.2, 87.5, 88.5, 88.8, 88.9, 89.
University of Michigan Homeopathic College	(1910)	78.2, 79, 79.4, 80.3, 82.5, 82.5, 82.8, 83.1, 85, 87.1.
University of Buffalo	(1909)	85.9
Jefferson Medical College	(1910)	81.7

CONDITIONED

Univ. of Michigan, Coll. of Med. and Surgery	(1910)	*75

* Condition; fell below 50 per cent. in chemistry and toxicology.

New Jersey Reciprocity Report

Dr. H. G. Norton, secretary of the New Jersey State Board of Medical Examiners, sends us a report of those licensed through reciprocity from November 6, 1909, to July 12, 1910. The following colleges were represented:

PASSED

College.	Year Grad.	Reciprocity with
Georgetown University	(1909)	New York
Baltimore University	(1901) New York; (1903)	Illinois
University of Maryland	(1909)	Delaware
Baltimore Medical College	(1906) Maine; (1907) New York; (1908) Vermont.	
Maryland Medical College	(1906)	Vermont
Atlantic Medical College	(1909) Delaware; (1909)	Maine
Harvard Medical School	(1900)	New York
Albany Medical College	(1904) (1905) (1908)	New York
Syracuse University	(1906)	New York
New York University Medical College	(1896)	New York
Eclectic Medical College of the City of New York (1909) New York.	(1905) (1906)	
New York Homeopathic Medical College and Hospital (3, 1909) New York.	(1905) (1907)	
Long Island College Hospital (1897) (1898) (1899) (1907) (1909) New York.		
Cornell University Medical College (3, 1909) New York.	(1900) (1906) (2, 1907) (1908)	
University of Buffalo.	(2, 1907)	New York
Columbia University, College of Physicians and Surgeons (1905) (1906) (1908) (3, 1909) New York.	(1896)	
University and Bellevue Hospital Medical College (4, 1908) (7, 1909) New York.	(1906) (2, 1907)	
University of Pennsylvania (1901) (1903) (1904) (1909) New York.		
Jefferson Medical College	(2, 1908)	New York
Hahnemann Medical College and Hospital, Philadelphia Pennsylvania; (1909) New York.	(1896);	
University of Virginia	(1904)	New York
McGill University, Montreal, Canada	(1904)	Maine
University of Naples, Italy	(1902)	New York
University of Bukharest, Roumania	(1900)	New York

Indiana January and July Reports

Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports the written examinations held at Indianapolis, January 11-13 and July 12-14, 1910.

The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75.

At the examination held in January, the total number of candidates examined was 21, of whom 19 passed and 2 failed. The following colleges were represented:

PASSED College.	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery (1908) 75.1; (1909) 75.9, 86.5, 88.		
Jenner Medical College	(1907)	75.2
College of Physicians and Surgeons, Chicago	(1909)	80.3
Northwestern University Medical School	(1909)	77, 81.8
Indiana Medical College	(1898)	82.9
Indiana University	(1909)	81.8
Louisville Medical College	(1905)	86.6
Harvard Medical School	(1908)	87.6
Univ. of Michigan, Coll. of Medicine and Surgery	(1909)	88.7
University of Michigan, Homeopathic College	(1910)	85.6
University and Bellevue Hospital Medical College	(1907)	83.8
Medical College of Ohio	(1882) 75.5; (1907)	83.5
University of Pennsylvania	(1906)	84.8
Woman's Medical College of Pennsylvania	(1902)	75.6

FAILED		
Indiana University	(1909)	68.5
Medico-Chirurgical College of Philadelphia	(1906)	68.4

At the examination held July 12-14, the total number of candidates examined was 86, of whom 79 passed, including one osteopath, and 7 failed. The following colleges were represented:

PASSED College.	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery (1909) 81.8; (1910) 84, 84.4.		
Bennett Medical College	(1910)	91.3
Hering Medical College	(1910)	88.6
Hahnemann Med. Coll. and Hospital, Chicago	(1908)	75.2
Illinois Medical College	(1910)	87.9
Indiana University (1909) 75; (1910) 75.9, 79.5, 79.5, 80.6, 81, 81.4, 81.5, 82.1, 83, 83.2, 84.3, 84.4, 84.6, 84.7, 84.7, 85.5, 85.5, 85.6, 85.7, 85.7, 86, 86.1, 86.5, 86.6, 87.1, 87.2, 87.3, 87.3, 87.9, 88.2, 88.3, 88.5, 88.6, 88.7, 89.3, 89.5, 89.6, 89.6, 90.2, 90.2, 90.4, 90.5, 90.5, 90.7, 90.9, 91.1, 91.5, 91.8, 92.3, 92.9, 92.9.		
University of Louisville (1910) 80.8, 81.9, 84.2, 84.3, 85.1, 85.8, 86.3, 88.8, 91.8.		
Baltimore Medical College	(1907)	86.8
Johns Hopkins University	(1910)	86
University of Michigan, Dept. of Med. and Surg.	(1909)	85.5
St. Louis University	(1910)	90.3
Eclectic Medical College, Cincinnati	(1910)	82.2
Paiute Medical College	(1910)	81.2
Hahnemann Med. Coll. and Hospital, Philadelphia	(1909)	83.8
University of Pennsylvania	(1910)	89.6, 92.3
Queen's University, Kingston, Ontario	(1908)	88.4

FAILED		
Hahnemann Med. Coll. and Hospital, Chicago	(1907)	72.8
Indiana Medical College	(1890)	66.9
Southwestern Homeo. Coll. and Hospital, Louisville	(1906)	63.4
Kentucky School of Medicine	(1889)	64.8
St. Louis College of Physicians and Surgeons	(1907)	61.4
Eclectic Medical College, Cincinnati	(1910)	56
Regia University, Pavia, Italy	(1891)	69.2

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

A PRACTICAL BUSINESS BUREAU FOR COUNTY SOCIETIES

H. G. Langworthy, M.D.
DUBUQUE, IOWA

A movement to establish business bureaus for county societies with an attorney who will make a systematic attempt to collect old bills, will doubtless meet the approval of physicians. Older members may not at first regard such a system with favor. They will say, and with some truth, that "such schemes have been tried and failed." This does not prove that the plan is fundamentally wrong, but that it must be practical and sound, or it is pretty sure to fail. But even failures have their lessons.

The plan which I present for your approval and which I have succeeded in having adopted by the Dubuque County Medical Society, simplifies as much as possible the ordinary plan of business cooperation and applies it to county societies in smaller cities, where it is often badly needed. An elaborate self-running bureau adapted to a city of a million population is not fitted altogether for a business bureau in small communities. I hope that some such plan may be adopted by every county medical society.

The reasons for the creation of a collection bureau for county societies are: 1. If all collections are made by the collection department patients cannot take offense against physicians for collecting through this bureau bills running over twelve months. 2. Many patients now regarded as subject of charity (not through necessity, but simply through unwillingness to pay a doctor's bill) would be induced to pay their bills. 3. The attorney representing the society would be able to make systematic quarterly collections better than anyone else. While the placing of bills in the hands of the attorney should be optional, it would seem clear that an able attorney, making a special business of this work, could handle medical accounts better than some unknown and irresponsible outside collection agency.

I will briefly outline the plan of the bureau at Dubuque, the result of two years' work on this subject. Modifications must be made as time and local conditions demand. I will furnish printed copies of the abstracted plan in detail on application.

INSTALLATION AND PLAN OF BUSINESS BUREAU FOR COUNTY SOCIETIES

WHEREAS, It is deemed advisable that the ———— County Medical Society should adopt a business bureau; therefore, be it

Resolved, In meeting duly assembled, this ————day of December, A.D. 19—, that the same be, and is hereby, adopted, and known as the business bureau of the ———— County Medical Society, and that the said bureau be conducted along the lines and governed according to the following:

1. That ———— shall act as attorney for the ———— County Medical Society in the capacity of conducting the business of the "Business Bureau" of said society, and pursuant thereto said attorney will call every three months on physicians who are members of the———— County Medical Society for statements of accounts and will give receipts for same. That he will keep a separate and private file for each physician's accounts and correspondence. That he will keep a complete system on which will be notated the exact status and progress of each account. That he will make quarterly returns direct to the physicians as the business bureau committee may direct. That he will not bring suit on accounts without authorization and private arrangement with the physician. That he will assist the committee in auditing accounts. That each physician's account will be open to his inspection at any time, but to no other physician; and that all other business matters will be kept absolutely private. That due diligence will be exercised in collecting all accounts turned over, and prompt settlement made after collection.

2. That the respective physicians will submit itemized statements of such accounts as they desire to place in the collector's hands. That physicians will receive remittances made directly to them from debtors. That on remittances made directly to the physician on accounts in the attorney's hands, commissions will be paid, but no commission will be allowed on bills remaining unsettled or on money not collected.

3. That the committee of the business bureau of the ———— County Medical Society may, at any time, audit the accounts in the hands of the attorney, and shall in cases of dispute distribute to the attorney the amount of his commission and to the physician the amount due him on such accounts. That the commission to the attorney on accounts collected shall be scheduled as follows, and on accounts collected in payment or installments the schedule per cent., per payment, will prevail:

Collections of $2 or under	.50 per cent. commission
Collections of $3 or under	.40 per cent. commission
Collections of $4 or under	.30 per cent. commission
Collections of $5 to $10	.25 per cent. commission
Collections over $10	.20 per cent. commission

4. That all expenditures in conducting the collections by way of record files, all paper, envelopes, stamps, etc., shall be borne by the attorney.

5. That said attorney, ————————, shall be appointed by the committee for a term of three years, subject, however, to removal by the business bureau committee or society for unwarranted neglect, dishonesty or general incompetency.

6. That the attorney shall arrange a reference list as to financial standing and responsibility of patients, accessible to members of the ———————— County Medical Society, but to none others. This list, together with such additional lists and information deemed justly the private property of the society, shall be turned over to his successor in case of withdrawal, dismissal, or for any other reason.

7. These articles and the power given the business bureau committee may be altered or curtailed by a two-thirds vote of members present and voting at any regular meeting, previous notice of such action having been given all members sixty days in advance.

It will be noted in the foregoing that the bureau has been established by the adoption of a simple resolution, and that no iron-clad contract is entered into between the society or the business bureau committee and the attorney. The commission schedule here adopted is the one furnished me by the manager of the Business Bureau of the Chicago Medical Society. While unquestionably a little high, it probably forms the best working basis of any present schedule, especially as many of our first accounts are most undesirable.

REPORT OF BUSINESS BUREAU OF THE DUBUQUE COUNTY MEDICAL SOCIETY FOR FIRST SIX MONTHS

The following report of the attorney to the Business Bureau Committee of the Dubuque County Medical Society will be found of interest:

I herewith submit a statement of money collected by the said bureau for the first six months of the year 1910, ending July 1, 1910, as follows: January, $105.50 February, $161.50; March, $228.50; April, $109; May, $23; June, $29; total, $656.50. In addition to the above, the bureau has collected in partial payments on bills not yet fully paid the sum of $213.15. The total amount of bills turned in to the bureau for the first six months was $8,176.53. There is represented in this amount many dollars of accounts that are absolutely worthless, for the reason that some debtors have left the city, a few cannot be located, some refuse to pay—in that they claim to be unable to make even a very small payment on their bills and will not make any promise of any definite time they will pay even a part, and other bills are what is known as outlawed.

The $656.50 in money paid into the bureau represents $958.50 of accounts turned in to the bureau. In other words, in order to collect $656.50 it was necessary to make reductions in the bills of $293, which is about a 45 per cent. reduction, which goes to prove the character of the bills so far as collecting them is concerned. In each instance the physician is consulted and the bureau authorized before a compromise or reduction is made. All debtors whose bills have been turned in to the bureau have been written to from one to three or more times, and nearly all who have not responded materially or came in person to the office of the bureau have been personally interviewed. At the end of one year from the time of placing bills the bureau will have been able to collect or report same uncollectable. Of the $656.50 collected all has been turned over to the physician due him therefrom, excepting $3, which is still in the hands of the bureau.

Among the experiences of the bureau may be mentioned: (1) Most of the members have at some time availed themselves of the use of the bureau. (2) All bills placed in the hands of the bureau have been carefully investigated in each case and the large majority of debtors visited personally by the attorney. (3) Debts have been divided into the two divisions: (A) collectable, and (B) uncollectable. (A bill on which 50 cents or $1 a week is being paid is placed in Class A.) (4) Almost without exception early bills turned in have passed through other hands for collection, in some instances repeatedly, without results, making it hard for the bureau to get a good start. (5) A considerable number of first accounts handed in were legally outlawed by the time limit of five years on book accounts. (6) Our attorney has found in some instances families charged practically the usual rate who ought to be considered little better than charity subjects. Doctors should discriminate carefully, and should not overcharge the poor laborer or the struggling clerk. (7) The establishment of a county society business bureau in Dubuque has resulted in a saving to the society of a considerable amount of money the past six months.

Occasionally physicians have thought it best not to hand in accounts unless they have been reported as worthless in other hands, the idea being that the commission rate charged would not warrant the placing of easy bills with the bureau. We hope that in the future physicians will find it to their interest to call up the bureau and discuss the matter thoroughly before using other agencies. At present our bureau sees no way to lower this scale, which, while a trifle high, forms the best working basis of any schedule which could be adopted. The future must demonstrate the advisability of lowering our scale; the past certainly has not. Whether the bureau will be able eventually to cooperate with the physicians on a slightly different basis should they wish to turn in on the first of every month all fair bills within their possession, remains to be seen.

The bureau has been of value in dealing with delinquents, as it always stands ready to collect at once or to bring early suit in court at a minimum cost without inconveniencing the physician.

In conclusion, I would like to emphasize the value of our bureau in educating delinquents by stirring up the careless and listing those who are really unworthy of credit. The optional feature, allowing physicians to turn in only such accounts as they desire, is also of value. The society is under no expense, as many young attorneys will take up the work on the basis outlined. A business bureau is not necessary in small communities, where each physician knows all about his families or can tell the other doctors the names of the shiftless and unworthy.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month—First Weekly Meeting

General Subject for the Month: Surgery of the Kidney and Ureter

ANATOMY

KIDNEY: Situation, surface markings, important relations, size, weight, surfaces, borders, extremities. Means of fixation, by three capsules. Relation of structures entering hilum. Relation of vascular supply to pelvis and calyces. Brödel's white line.

URETER: Structure.—Location, length, diameter, constrictions, dilatations, course, relations. Pelvic relations in male; in female.

SURGERY OF THE URETER

SURGICAL LESIONS OF THE URETER: Surgical injuries, puerperal injuries, congenital fistula, tuberculosis, pyoureter, calculus, malignant disease.

DIAGNOSIS: Pain, urine or purulent discharge in fistula, examination of ureteral orifices by cystoscopy, catheterization of uterers. *X*-ray in calculus.

TREATMENT

SURGICAL INJURIES: Immediate treatment; technic of ureteral anastomosis; end-to-end, lateral and end-to-side; ureterovesical anastomosis. Late operations; treatment of ureteral fistulæ.

CALCULUS OF URETER: Localization of stone. Site of incision. Variations in technic.

TUBERCULOSIS OF URETER: Secondary to renal tuberculosis. Indications for surgical treatment. Technic of nephroureterectomy, of ureterectomy.

STRICTURE OF URETER: Diagnosis; treatment.

REFERENCE BOOKS FOR THE THIRD MONTH

Kelly and Noble: Gynecology and Abdominal Surgery, vol. II.
Watson and Cunningham: Diseases and Surgery of the Genitourinary System.
White and Martin: Genitourinary Surgery and Venereal Diseases.
Caspar: Genitourinary Diseases.
Morris: Surgery of the Kidney and Ureter.
Edebohls: Surgical Treatment of Bright's Disease.
Garceau: Renal Tumors.
Keen: Surgery.
Bryant and Buck: Surgery.

Book Notices

PRÉCIS DU TRAITEMENT DES FRACTURES PAR LE MASSAGE ET LA MOBILISATION. Par Dr. Just Lucas-Championnière, Chirurgien Honoraire de l'Hôtel-Dieu. Paper. Price, 3.50 francs. Pp. 267. Paris: G. Steinheil, 2 rue Casimir-Delavigne, 1910.

In this little treatise Lucas-Championnière amply justifies his claim to the title of pioneer in the treatment of fractures by massage and mobilization. The first half of the book is largely devoted to a general consideration of massage in its application to fractures and the manner of performing the various passive and active motions. The advantages of these maneuvers are enthusiastically lauded, and justly so, when one recalls the dire functional results of too long immobilization. While the text, on the whole, would be improved by being condensed, and much detail could be omitted, the careful reader will find much in the way of sound advice and wisdom, the fruit of long clinical experience. The author very properly refers to the frequent errors which are made in the interpretation of radiographs, mere shadow pictures, and cautions against disregarding clinical phenomena and the findings of a careful clinical examination.

The book is too radical for the use of students, but should prove both interesting and profitable reading for surgeons interested in fractures. The following are a few extracts from its pages: "It is not immobilization which favors the formation of callus, but motion"—"immobilization interferes with the vitality of the limb."—"Pain is relieved by certain forms of motion. Immobilization is a secondary factor."—"There can be delayed union in spite of immobilization. Stiff joints and useless limbs follow immobilization."—"A certain amount of motion between the fragments favors the development of callus."—"Reduction is in many cases unnecessary, in others positively dangerous." The author admits that he sutures the patella, because the fragments cannot be approximated. In Colles' fracture, reduction is regarded as generally useless unless the deformity is great. Daily massage and motion are indulged in, and the patients are urged to use their arms. The principle throughout the book seems to be to disregard the cosmetic result in favor of restored function, even in the presence of overriding. With the *x*-ray controlling our results nowadays, how long could a surgeon last who went on that principle in America?

Fractures about the elbow in children, and fractures of the clavicle, are daily massaged. The effect of the treatment is to relieve the spasm and relax the muscles, thus eliminating the traction on the fragments, which fall into place.

The enthusiasm of the author has unquestionably carried him too far in attempting to apply to all fractures the principle of massage to the exclusion of all else. The description of the technic in individual fractures is frequently so brief and vague as to preclude imitation. Yet the little book will have fulfilled a most valuable mission if it will recall to the average practitioner and surgeon that he is immobilizing too strenuously, and keeping splints on entirely too long, that the latter can be more often removed for the purpose of massage and passive motion, and better results obtained.

FACTS AND PROBLEMS OF RABIES. By A. M. Stimson, Bull. 65, Hyg. Lab., U. S. P. H. and M.-H. S., June, 1910. Paper. Pp. 90, with illustrations. Washington: Government Printing Office, 1910.

A timely and most excellent review of the "Facts and Problems of Rabies" has just been issued by the Hygienic Laboratory of the Public Health and Marine-Hospital Service, from which the following statements are selected for the purpose of emphasis: "There has been handed down from the ages, when superstition and ignorance had as yet received but little counterbalancing check from the influence of reasonable or scientific investigation, a mass of erroneous belief which, in its extent and fantastic distortions, probably exceeds that to which any other malady has fallen heir." "There still remain persons who are skeptical concerning, or even deny the existence of, rabies as a distinct disease. If they are fair-minded and possess an average amount of intelligence, a visit to a laboratory where scientific work in this direction is being done will suffice to dispel their objections, even if their faith in human nature is so slight that they are able to regard those investigators who have devoted years of disinterested study to the subject as untruthful or very badly mistaken."

"Since it has been demonstrated that, by comparatively simple measures, the disease can be reduced to a minimum or even wholly eradicated, it is raised to an importance disproportionately great to the frequency of its occurrence compared with that of less remediable maladies. The continued existence, not to say increase, of rabies in animals and man is a reproach on the efficiency of organized medical bodies for the suppression of disease." "We have now, and have had for a long time, all the knowledge of rabies necessary to effect its entire suppression. This knowledge can be summed up in a single sentence, to wit: Rabies is perpetuated in the dog through the infliction of bites by a rabid dog, and does not arise spontaneously. If all rabid dogs could be prevented from biting other animals, rabies would in the course of a year be a mere historical curiosity of medicine, an illegitimate field of research for the investigator in pure pathology, a plaything for the controversialist. There are few infectious diseases the prevention of which rests, as in rabies, on a single definite measure."

AN INTERNATIONAL SYSTEM OF OPHTHALMIC PRACTICE. Edited by Walter L. Pyle, M.D., Philadelphia, Member of the American Ophthalmological Society. Therapeutics. By Dr. A. Darier, Paris. Translated by Sydney Stephenson, F.R.C.S., London, Late Honorary Secretary of the Ophthalmological Society. Cloth. Price, $4 net. Pp. 444, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

This portion of Pyle's "System of Ophthalmic Practice" is devoted to therapeutics and was written by Dr. A. Darier of Paris, who is peculiarly fitted to present this subject. Dr. Darier is fortunate in having his work translated into English by Mr. Sydney Stephenson. The more recent diagnostic methods, both general and special, are dealt with as well as the general treatment indicated in those eye diseases associated with general disease. The complications and after-treatment of surgical procedures on the eye are discussed exhaustively. Nothing is offered regarding the important relations existing between the eyes and the nasal cavities; otherwise the book merits approval. It is compact and practical and presents the latest methods of ophthalmic practice in a clear, concise manner.

A MANUAL OF PERSONAL HYGIENE. Proper Living on a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, M. D., Member of the American Ophthalmological Society. Fourth Edition. Cloth. Price, $1.50 net. Pp. 472, with 131 illustrations. Philadelphia: W. B. Saunders Co., 1910.

This book is for the layman and deals with "the one subject which every fair-minded person admits should be taught thoroughly—namely, how to keep healthy . . ." The way in which this subject is handled by the various authors who contribute to this work is eminently sane, catholic and generally admirable. To the chapters on the hygiene of the digestive apparatus, of the skin and its appendages, of the vocal and respiratory apparatus, of the ear, of the eye, of the brain and nervous system and on physical exercise that appeared in the previous editions have been added ones on body-posture and domestic hygiene. There is also an appendix, and a glossary of such technical terms as have been unavoidably used.

PRÉCIS D'AUTO-SUGGESTION VOLONTAIRE. Par le docteur Gerard Bonnet, d'Oran, Officier de l'Instruction Publique. Paper. Price, 3 francs. Pp. 300. Paris: Jules Rousset, 1, Rue Casimir-Delavigne, 1910.

This book seems to have been written for the layman. The author has great belief in free will and in the power of the individual to control his thoughts in any direction. There are some valuable suggestions, especially in the chapter on concentration of the thought. The book adds nothing to our knowledge. It states in a manner tended to make its point appreciated the strength and value of hypnotism and suggestion whether from without or within.

Medicolegal

Points From Suit Against Alienists for Damages for Alleged Negligence in Examination as to Sanity

The Second Appellate Division of the Supreme Court of New York says that the case of Warner vs. Packer and another (123 N. Y. S. 725) was for negligence. The plaintiff had been confined for a time in an insane asylum on her husband's petition, to which was annexed a certificate of the defendants as examiners in lunacy that she was insane and was a proper subject for custody and treatment in some institution for the insane as an insane person. She complained that the defendants had made a false, pretended, and grossly negligent examination of her as to her mental condition, that she was not insane then or at any time, that the defendants willfully failed and neglected to use or to exercise reasonable and ordinary care, skill, and diligence to ascertain her true mental condition, or to make a prudent and careful inquiry and proof whether she was sane or insane, and failed to exercise their best judgment as to her sanity, but with gross and culpable negligence based their opinions on false and pretended statements made to them by her husband. She gained a verdict for $25,000, and the defendants appealed from the judgment thereon.

The defendants were feed by the husband to make an examination. Thereupon they impliedly represented that they possessed the reasonable degree of learning and skill ordinarily possessed by the average examiners in lunacy, and in the rendition of the services they undertook to use such skill and learning, to exert their best judgment in the application thereof, and to exercise reasonable care.

The burden was on the plaintiff to show that the defendants fell short in their qualifications or their obligations. The plaintiff did not advance the proposition that the defendants were not qualified. On the other hand, the evidence showed that they were educated in their profession, alienists who as such had filled important public positions, and were of large experience gained from thousands of examinations. The court therefore need not consider that ground of liability. The question on the appeal was whether the plaintiff made proof to justify the verdict of negligence in the ascertainment of her true mental condition. The defendants testified in detail as to their professional conduct.

The plaintiff's case consisted largely of testimony of lay witnesses, her acquaintances and friends, that in their opinion specified words and acts of hers were rational. She contended that at all times she was sane. Such contention, so far as it related to the time of her examination, was essential, inasmuch as she could not have been harmed by a certificate of the truth unless her insanity did not require restraint and treatment. A certificate of her insanity when she was sane could establish error of judgment, but for that the defendants were not liable; and it could be considered as evidence bearing on the defendants' qualifications or indicating failure to fulfill their obligations as to skill, learning, care, and best judgment in the case. But no presumption of negligence in the defendants arose solely on the establishment of her sanity at the time of her examination by the defendants.

A striking feature in the plaintiff's case was the omission of any scientific or expert evidence as to the course pursued by the defendants in the examination, as to what was done that the average examiner in lunacy would not have done, or as to what was not done which such an examiner would have done under the circumstances of the case.

We know insanity is a mysterious disease, that it may exist without physical indications, is often cunningly concealed so as almost or altogether to baffle detection even by a specialist, or may be so occult as to cause most eminent alienists to clash as to its existence in an instance. The diagnosis of it is recognized as a difficult task. It seems to the court that the very nature of the subject—the question of negligence is a diagnosis—would almost preclude a jury from passing on it by their common knowledge unaided by any scientific or expert information whatever, or by the testimony of any witnesses of special knowledge and skill. Yet there was not in evidence any standard for comparison of the conduct of the defendants with that which was required of them.

Nor does the court think that any negligence could be imputed in this case to the omission to make further inquiries, although it was recognized in a leading English case (Hall vs. Semple, 1 F. & F., 337) that such obligation might exist. The husband's narrative was of the relations between him and his wife—this plaintiff—of her conduct and her bearing towards him. Husband and wife appeared as living under the same roof, and there was no indication that there was any one whom the defendants could have consulted in corroboration of the husband, save of course, the wife.

There was ground for surmise that the jury found negligence from the premise that the plaintiff was sane at the time the defendants certified that she was insane, for the minutes showed that they "returned their verdict in which they find that Mrs. Warner was, on the 13th day of July, sane and rational and find doctors guilty of negligence and fix the damages at $25,000." But the finding of sanity was no more a part of their formal verdict than would be a finding in a verdict for the plaintiff in a negligence case that the plaintiff was not chargeable with contributory negligence. On consideration of the case in the light most favorable to the plaintiff, as was her due, the court fails to find sufficient evidence to support the verdict. Wherefore, the court reverses the judgment appealed from and grants a new trial.

Matters on Which Expert Witnesses may be Questioned

The Supreme Court of Florida holds, in Pensacola Electric Co. vs. Bissett (52 So. R. 367), a personal injury case brought by the latter party, that, although an expert witness may not be questioned, either on his direct or cross examination, on an hypothesis having no foundation in the evidence, yet it is not required that the hypothetical case put to him should be an exact reproduction of the evidence, or an accurate presentation of what has been testified to. Counsel may present to him any hypothetical case in accordance with any reasonable theory based on the evidence; but, in the event that the jury should find that the facts on which such hypothesis or theory of the case was based have not been proved, the answer of the expert necessarily falls with the hypothesis.

An expert witness who has given his opinion on any question or hypothesis submitted to him may be further interrogated on his cross-examination as to the reasons for such an opinion. And for this purpose it is within the discretion of the trial court to widen the range of such cross-examination, even so as to include matters not strictly pertinent to the issues, in order to test the witness' means of knowledge, the extent of his information, memory, accuracy, or credibility, and an appellate court will not interfere with the exercise of such discretion, unless a clear abuse thereof is made to appear.

Insufficient Evidence to Sustain Conviction of Wrongfully Going on Street While Afflicted with Small-Pox

The Court of Appeals of Kentucky in Lawrence vs. Commonwealth (127 S. W. R., 1013) reverses a conviction had under the statute of that state which provides that "any person who, having reason at the time to believe himself afflicted with the disease of small-pox, shall voluntarily go on any public highway or street, shall be guilty of a misdemeanor, and, on conviction, shall be fined not less than one hundred nor more than one thousand dollars." It says that the statute states that anyone having reason at the time to believe himself "afflicted" with the disease of small-pox, going on the public highway, etc., commits the offense. There was very slight evidence conducing to show that the accused might have had the small-pox, but there was none to show that he had reason to believe that he had it when he went on the streets and public highways. A Mr. Brown, the man with whom he boarded while working at a rock quarry with more than 50 persons, said to him one evening that he (Brown) believed that he had small-pox, and that he could not let him stay in the house that night, but that he could go to the barn and sleep in the hay. The accused went to the barn, but got so cold during the night that he had to get up and leave. None

of the persons who worked with him at the rock quarry took the smallpox, but several of Brown's family did have it. There was no evidence showing that he went on the streets or public highways after Brown told him that he believed that he had the smallpox, and Brown's statement to him was the first thing to indicate to the accused that he had any reason to believe that he had the smallpox, and he went to the barn, as Brown told him, to sleep, but grew so cold during the night that he had to leave, and went to his home in another county. The accused testified that he did not believe at the time that he had the smallpox, and stated that he did not have it; that the eruption he had on his face was common to him yearly from infancy. He was corroborated in this statement by both his father and brother, and there was no evidence to the contrary. As stated, there was but very slight evidence to the effect that he had the smallpox and none that he had reason to believe that he had it when he voluntarily went on the streets and public highways, and the court should have instructed the jury peremptorily to find him not guilty.

Physician Prevented from Testifying to Account

The Supreme Court of North Carolina says, in the case of Knight vs. Everett, as administrator (67 S. E. R. 328), that it was an action for medical services rendered by the plaintiff, a physician, to the decedent of whose estate the defendant was administrator. The physician was offered as a witness in his own behalf to prove that he attended on the decedent, had an account against him therefor, to prove the items of the account, the number of visits he made, the sum due therefor, and the value of his services. Each of these questions was objected to, and the evidence was properly ruled out. Such evidence was clearly as to "personal transactions" with the deceased, and incompetent under the terms of the North Carolina statute, the defendant administrator not having testified as to these matters, and the statute providing that a party to, or interested in the event of, a suit shall not be examined as a witness in his own behalf or interest against the adminstrator, etc., of a deceased person "concerning a personal transaction or communication between the witness and the deceased person," except where the administrator, etc., is examined in his own behalf, or the testimony of the deceased person is given in evidence concerning the same transaction or communication. The plaintiff physician could not prove by his own testimony either an express contract, which would be a "communication" with the deceased, nor an implied contract, by showing a "personal transaction," as services rendered.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

October

1 Street Dust as a Factor in Spreading Disease. J. M. Anders, Philadelphia.
2 Surgery in Relation to Nervous Patients. L. N. Lanehart, Hempstead, N. Y.
3 Gonococcus Infection of the Kidney. F. R. Hagner, Washington, D. C.
4 Carcinoma of the Splenic Flexure of the Colon Treated with Neoformans Vaccine. C. D. Aaron, Detroit, Mich.
5 Diagnosis of Incipient Pulmonary Tuberculosis. H. H. Pelton, New York.
6 The Metreurynter Incision of Dührssen in Treatment of Placenta Praevia. S. W. Bandler, New York.
7 Neuritis. W. B. Snow, New York.
8 Stricture of the Male Urethra. W. B. Brouner, New York City.

New York Medical Journal

October 1

9 Importance to Physicians of the New Employers' Liability Law. J. J. Moorhead, New York.
10 Twilight Talks by the Doctor. G. F. Butler, Chicago.
11 Bubonic Plague in Ground Squirrels. G. W. McCoy, San Francisco.
12 Scarlet Fever. J. Sobel, New York.
13 Aconite. J. Knott, Dublin, Ireland.
14 Case of Double Tertian Malarial Infection. D. H. B. Ulmer, Philadelphia.
15 The Modern Brown Bread Pill. J. J. Buzzell, Brooklyn.
16 Postoperative Complications in a Case of Acute Secondary Glaucoma, A Case of Mature Senile Cataract, and A Case of Sudden Death While Performing Iridectomy for Acute Glaucoma. D. F. Harbridge, Philadelphia.

Boston Medical and Surgical Journal

September 29

17 *Plastic Surgery of the Ovaries and Tubes. W. C. Seelye, Worcester, Mass.
18 *Postoperative Pneumonia Without Mortality in Two Thousand Consecutive Surgical Operations at the Free Hospital for Women. W. P. Graves, Boston.
19 *Analysis of Seventy-two Cases of Pneumothorax. J. B. Ayer, Boston.

17. **Plastic Surgery of Ovaries and Tubes.**—The patients on whom Seelye has operated in the past two years, 9 single and 12 married, or 21 in all, represent cases of dysmenorrhea and irregularities in catamenia; 10 patients had resection of one ovary; 5 had double resection of ovaries; 6 had resection of one and extirpation of the other ovary. Of these, all but one woman had marked immediate relief from dysmenorrhea, and the relief has held to the present time. In 2 of these cases dysmenorrhea was so severe that the patients had to go to bed for several days at each period. The intervals were shortened, and the patients had only about one week free from pain between periods. These women were not only relieved of dysmenorrhea, but the periods became normal in time. The one patient unrelieved was among the first 10 and one in whom, Seelye, says, resection or extirpation of the untouched ovary ought to have been done, for it was large and cystic.

Of the remaining 14 patients, 4 were over 40 years of age and had chronic inflammation of both tubes and ovaries. Total extirpation was performed in each. One had a large cyst combined with a pus tube on one side, which was removed with the tube; 8 had resection of one or both tubes on account of occlusion from past inflammation—the lumen was left patent, and the ovary brought into close contact with the proximal end of the tube. In these 14 patients, the late results in 4 are unknown; the rest have been in good health with no symptoms. No pregnancies have yet been reported. Seelye pleads for more abdominal operations on the pelvic organs in cases of severe dysmenorrhea, and, emphasizes the importance of classification as an aid in determining the mode of procedure in a given case for operation on the ovaries and tubes.

18. **Postoperative Pneumonia Without Mortality.**—As a result of an examination of these cases, consisting of over 1,000 laparotomies, Graves concludes that postoperative lung conditions occur somewhat more frequently and are more fatal in patients previously septic or desperately ill or in the aged and feeble. Operative shock, method of administration, length of time of the anesthesia, age of the patient unless extreme, physical type of the patient, bad behavior under ether, wound sepsis, pulmonary embolism, do not seem to bear any constant relationship to the causation of postoperative pneumonia. Postoperative pneumonia and bronchitis occur with great constancy during the cold weather months, and are rare during the summer months. Pre-existing foci of infection in the lungs are almost invariably lighted up or aggravated by operations under ether anesthesia. The following theory of causation is suggested by Graves. Most of the cases of postoperative lung complications are caused by the lighting up or the aggravation of pre-existing focal infection. Many postoperative pneumonias might be avoided by a more careful and more expert preoperative examination of the respiratory tract.

19. **Pneumothorax.**—Tuberculous cases comprised 69 per cent. of all cases of pneumothorax at the Boston City Hospital in twenty-eight years. Most patients were young or middle-aged men, and most had a recent history of less than six month's illness. The left side was most often affected. Pain and dyspnea were by far the most common symptoms at onset. A number of acute symptoms were less frequently of prime importance. The treatment in these cases was for the most part essentially that of the fluid present; the prognosis was anything but encouraging. Two rare cases are reported, one from subphrenic-intrathoracic abscess and one due to echinococcus. Artificial pneumothorax oc-

cured in 19 per cent. and possibly in 32 per cent. of the cases. Roentgen-ray examination has frequently made difficult cases clear, rendered diagnoses more exact, qualified prognosis and explained the effect of treatment. Since this form of examination has come into more constant use in the hospital, pneumothorax has been more frequently diagnosticated.

Lancet-Clinic, Cincinnati

September 24

20 *Diagnosis of Surgical Lesions of the Kidney. L. Frank, Louisville, Ky.
21 Cause and Pathology of Glaucoma. C. H. Castle, Cincinnati, Ohio.

20. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1220.

Detroit Medical Journal

September

22 The Owen Bill for the Establishment of a Federal Department of Health and Its Opponents. S. A. Knopf, New York.
23 *Should the Physician Do His Own Dispensing? H. B. Garner, Detroit.
24 Arithmetic in Medicine. R. Wallace, Louisville, Ky.

23. **Physician's Dispensing.**—The reasons which are given by Garner why the physician should not dispense his own medicines are in brief as follows: He is a physician and not a pharmacist. His time with a patient must, if it results in the greatest good of the patient, be devoted to the diagnosis and treatment of his case. The country is loaded with an inferior class of goods and he is apt to employ cheap remedies in preference to the better qualities of pharmaceutical preparations. He cannot devote a proper amount of time to the preparation of active and reliable drugs and carry on a general practice successfully. His drugs of necessity must deteriorate. He falls into a routine way of prescribing pills, the formula of which has been studied by someone else, and often does not fill the bill. On the other hand, it is equally important to bring up objections urged against prescription writing. Druggists substitute. Druggists secure the business that rightfully belongs to the physician by counter prescribing. Patients pay the physician for the prescription and have it refilled any number of times without the physician's knowledge or advice. Garner urges that the medical and pharmaceutical professions join hands, having for their aim honesty, quality, and perfection. The hearty cooperation will bring forth apothecary shops that will be an honor to the owner and a credit to the employes.

Kentucky Medical Journal, Bowling Green

September 15

25 General Anesthesia. D. W. Barrow, Lexington.
26 Preventable Diseases. S. E. Hampton, Milton.
27 The Dührssen Operation for Cystocele and Prolapse of the Uterus. D. W. Barrow, Lexington.
28 Report of Some Malignant Cases. J. T. Dunn, Louisville.

Virginia Medical Semi-Monthly, Richmond

September 23

29 Differential Diagnosis and Treatment of Rheumatic Arthritis and Arthritis Deformans. J. C. Walton, Richmond.
30 Case of Acute Lymphatic Leukemia. E. F. Cooke, Houston, Texas.
31 *Cancer in Virginia—Trustworthy Vital Statistics the Foundation of Public Health—The Organization of a Cancer Association in Virginia. S. Harnsberger, Catlett.
32 Passing of the Intern as Anesthetist in Washington, D. C. C. N. Chipman.
33 Early Celiotomy for Ovarian Tumors. J. E. Rawls, Suffolk.

31. Published in the *Charlotte Medical Journal*, August, 1910, p. 87.

Northwest Medicine, Seattle, Washington

September

34 *Acute Anterior Poliomyelitis. W. House, Portland, Ore.
35 The Medical Practice Law. F. P. Witter, Spokane, Wash.
36 Life-Insurance from the Medical Examiner's Standpoint. E. V. Silver, Salt Lake City, Utah.
37 Postoperative Treatment. G. N. Pease, Portland, Ore.
38 Early Operation in Acute Intestinal Obstruction. C. N. Suttner, Walla Walla, Wash.
39 Trials of the Country Physician and His Relations to the Specialist. W. Appleby, Anacortes, Wash.
40 Relation of the Specialist to the Family Physician. H. V. Würdemann, Seattle.
41 Circulation in the Nose and Throat and Its Relation to the Rest of the Body. L. K. Klemptner, Seattle.
42 Toxemia and Eclampsia, with Special Reference to Its Etiology and Medical Treatment. S. H. Johnson, Bellingham, Wash.
43 A Case of Pellagra. W. B. Scott, Seattle, Wash.

34. **Acute Anterior Poliomyelitis.**—Throughout the winter of 1909-10, patients continued to come for after-care, but always reported the acute trouble as having occurred before the end of November, except in two instances, in which the disease developed in December. House saw 31 patients. They came from Portland, from along the lines of the Southern Pacific Railroad, from down the Columbia as far as Astoria, and one from near Weiser, Idaho. The lesion was in the lumbar region in 23, all children under 7, with consequent paralysis of the legs. One case was purely of the cerebral type. The patient, a child of 7, was unconscious and died without exhibiting any characteristic palsy. But the clinical picture seemed typical. Necropsy, performed 4 days after death, after decomposition had begun, revealed absence of gross pathologic lesion, which would be expected under the circumstances. House feels, confirmed the diagnosis. The remaining 6 patients exhibited symptoms of cervical involvement and 3 of them showed marked cerebral symptoms. These 3, all young children, died. Of the 3 patients in whom the lesion appeared to be entirely cervical all were girls of from 16 to 20 years of age. One died from respiratory insufficiency, and the others recovered with palsies to be later described.

So far as House's observations are concerned, there were no definite foci and no definite method of spread, except that the cases from out of Portland all came from along the line of the S. P. and O. R. & N. railroads. Roseburg appears to have been the center of an unusually large number of cases. In Portland the patients came from all parts of the city, without any apparent source of infection which could in any way account for the distribution and without any possibility of direct contagion from one to the other; nor does House know of any household in which two or more cases occurred. Personally, his belief in the infectious nature of this disease is strong, but is not based on any confirmatory evidence obtained from the recent epidemic.

Many of his patients derived relief from mild mustard plasters to the spine. If they were restless, bromids were used in moderate dose, supplemented with codein if pain was severe. If the lesion was in the lumbar region a little phenacetin was used, but never if the lesion was higher up, because of the danger to the already embarrassed respiration. House suggests that in patients in whom the lesion is cervical with the resulting impairment of respiration, atropin will be indicated, and inhalations of oxygen, together with artificial respiration, appear to have a just place in treatment. Rest in bed and quiet was urged, and throughout, a nutritious, easily digested diet was ordered. Attention was given to insure that the bladder was properly emptied. All attempts at massage were discouraged until pain had subsided. At this time small doses of strychnin will be helpful, House states, and electricity is indicated, but must be given with great care. The faradic current apparently is valueless, but the slowly interrupted galvanic current seems to do much good. Treatments should be given daily and should be short, not more than from 3 to 5 minutes to each affected limb. House used about 60 interruptions to the minute and feels confident that most patients derived great benefit from this treatment.

Ophthalmic Record, Chicago

September

44 Trephining for Glaucoma. G. Young, New York.
45 Choked Disc Possessing Some Unique Features. C. M. Harris, Johnstown, Pa.
46 Ossification of the Hyaloid Membrane. N. Vassiliades, Beyrout, Syria.
47 Homatropin. L. Emerson, Orange, N. J.
48 Use of the Schlotz Tonometer. W. B. Marple, New York City.

Cleveland Medical Journal

August

49 *So-Called Spontaneous Gangrene. R. Dexter and A. W. M. Ellis, Cleveland.
50 Tuberculin Reaction in Diagnosis of Tuberculous Conditions in Children. W. P. Lucas, Boston.
51 Hodgkin's Disease with Recurrent Fever. J. Phillips, Cleveland.
52 *Is a High-School Education Sufficient Preparation for the Study of Medicine? F. C. Waite, Cleveland.
53 Professional Duty. J. G. Spenzer, Cleveland.
54 Traumatic Insanity. H. H. Drysdale, Cleveland.
55 Scientific Research in State Institutions. C. H. Clark, Cleveland.

September

56 *Management of Scarlet Fever in the Home. E. F. Cushing, Cleveland.
57 Location and Nature of Injuries of the Gastro-Intestinal Tract Following Abdominal Trauma. C. E. Briggs, Cleveland.
58 Stokes-Adams Disease. M. J. Lichty, Cleveland.
59 Nephritis, a Complication of Impetigo. J. Phillips, Cleveland.
60 Clinical Manifestations Among the Insane. J. D. O'Brien and O. D. Talge, Massillon, Ohio.
61 Biliary Lithiasis and Inanition. M. Schott, Cleveland.
62 *Technic for Closing the Urinary Bladder After Suprapubic Opening. W. E. Lower, Cleveland.
63 *An Abnormality in the Form of the Femur. C. A. Hamann, Cleveland.
64 *Treatment of Varicose Ulcer of the Leg. M. Coplan, Cleveland.

49. **Spontaneous Gangrene.**—A review of the literature of this subject disclosed to the authors 73 cases, which they consider undoubted examples of spontaneous gangrene; 69 patients were males and 4 females. Two patients were under 20 years old, 7 were between 20 and 30; 9 between 31 and 35; 22 between 36 and 40; 12 between 41 and 45; 10 between 46 and 50; 10 between 50 and 60; 1, age not mentioned. Although the symptoms in one case were present for over 20 years—the average duration was from 3 to 5 years. In the 68 cases in which the location was mentioned, the condition occurred 53 times in the legs alone, twice in the arms alone, and 13 times in both upper and lower extremities. In more than one-third of the cases, the pulse in the femoral and all the vessels distal to it, was lessened or obliterated, while in nearly two-thirds the vessels as high as the popliteal were involved. Neither syphilis nor the use of tobacco seemed to play any part in the causation of this condition. The authors report one case seen by them. They believe that it was a case of general arterial thrombosis, exactly similar to that found in the extremities in the condition known as spontaneous gangrene.

52. **Preparation for the Study of Medicine.**—We may assume, says Waite, that everyone preparing to enter the medical profession hopes to work out a successful career. The medical career is one of many points of contact. It is not alone technical: it has its social, sociologic and public relations. Physicians and surgeons are not mere practitioners; they are also human beings. The physician is by his profession a semipublic servant; much more so than are members of most other professions. His calling brings him into contact with all conditions of men and his relation to these is very intimate. He is a factor in the general welfare of the community; not only in its physical welfare, but in its moral, mental and social prosperity as well. He is more than a technician or a tradesman, and he must—if he is to succeed—be prepared to discharge efficiently all these correlated obligations as well as to execute his main purpose of combating disease. He cannot confine his activities to diagnosis and the giving of medicine. He must be ready as adviser and friend. He must be prepared for public service. He needs the power of trained personality if he is to protect his entire constituency—the public at large—in the maintenance and advance of public health. And since he is more than a physician, he needs more than merely a medical training. The high school has given him a certain sort of training of a routine nature. Such is essential at that developing period of a boy's life, but not all-sufficient for the various demands of a medical career. It is different in kind from the college training and it needs supplementing before the technical studies of the medical curriculum are begun. A college training gives the student a breadth of view not obtainable in any other way.

Medicine is no longer an art but has become a science. It is more and more coming to be applied biology, chemistry, physics and psychology. The high school teaching of these subjects must needs be extremely elementary and superficial, and it is by no means adequate as a preparation for the studies of the medical curriculum. Nor can the medical school give these preparatory subjects properly and in logical order. A full four years is needed for the medical studies, without consuming time and energy in doing the preliminary work. The consensus of opinion after all the discussion of the past ten years on the various phases of medical education is that a high school education alone is not enough preparation to enable a student to get a medical education that is efficient and adequate, and that, if a boy is absolutely prevented from further preparation, he had best not attempt to enter the profession by the back door of the low-grade school, for his hope of a successful career following such a training will probably never be realized. Under these circumstances, it is to his own advantage to seek some other field of effort.

62. **Closing the Urinary Bladder.**—Lower has opened the bladder suprapubically 69 times for various causes, and has made an immediate closure in 35 and has employed drainage in 34. In the drainage cases the patients required from 3 to 4 weeks longer than the immediate closure cases, and generally had an annoying period of convalescence with dirty bladders which required irrigation afterwards. In the closure cases the patients averaged from 2 to 3 weeks for convalescence and generally were up and about in from 10 days to 2 weeks. The bladders were irrigated through the urethra from the start and by the time the patients were ready to leave the hospital, the infection (when present) had progressed well toward recovery. The technic employed is as follows: The bladder is thoroughly washed with a boracic solution and then filled with the same before the patient is anesthetized. Nothing is inserted into the rectum as is often done.

The patient is placed in the Trendelenburg position, a vertical or transverse incision is made, depending on whether or not there is much adipose tissue. After cutting through the sheath of the rectus and separating the muscle, the peritoneum is pushed out of the field and the bladder exposed extraperitoneally. A curved two-pronged tenaculum or bullet forceps catches the bladder on each side, the bladder is lifted and an incision made longitudinally between the two tenacula into the bladder. The tenacula are now removed and the edges of the bladder incision retracted with small smooth retractors (if greater retraction is needed), but at no time, and this is important, are the cut edges caught by a crushing forceps, e. g. like a hemostat. If this is done, it will be impossible to get a close approximation of the cut edges. When the wound is ready for closure, a round, half-curved needle threaded with 00 chromic catgut is used, never linen or silk. Stones almost invariably form if the ligature is nonabsorbable. The first suture is passed through the muscular coat down to the mucosa and a free end is left long for traction; a tenaculum is inserted at the other end of the opening and the cut stretched. The first row of sutures is then made parallel with the cut muscles, never through the mucosa, and is drawn only tightly enough to approximate nicely the cut edges. The next row of sutures is made transversely to the cut and penetrates all the layers of the bladder except the mucosa and is then tied to the free end of the first layer. By keeping the bladder on the stretch and placing the transverse sutures closely together, when the bladder contracts it makes the wound still more firm, but if sutured when the bladder is contracted, then, when the bladder becomes distended, the sutures will be stretched apart and there will be great danger of leakage.

63. **Abnormal Femora.**—These bones were taken from a tall, thin, male adult who had apparently died of tuberculosis. There are no abnormalities in the other bones, with the exception that the upper thirds of both tibiæ are rather thicker in the transverse diameter and the curves in the bone were somewhat greater than is normal. The femora are perfectly symmetrical; the surface of the bones is smooth and there is no evidence of periosteal or osteal inflammation; the articular extremities show no evidence of disease. At about the middle of the shaft, each femur begins gradually to flatten anteroposteriorly and the transverse diameter increases till the condyles are reached, thus differing markedly from the more rounded form of the normal femur. A transverse section of the bone would therefore present a transversely oval form. Hamann says that these bones do not correspond in shape or appearance to any of the pathologic modifications of the femur that have been described, indeed as stated above there is no evidence of any inflammatory or hyperplastic process. The density of the bone seems normal, no section has been made to show the interior however.

64. Varicose Ulcer of Leg.—The non-surgical treatment of the disease alone is discussed by Coplan. The general treatment employed by him consists in attention to the bowels, building up the general system; removing the cause, if possible, and regulating the habits and diet. Rest for the limb is essential. An elastic stocking should be ordered at once and the patient made to wear it whenever he is on his feet. The treatment of the ulcer itself consists in thorough antisepsis of the wound and surrounding skin, procured by first washing the entire leg with soap and water and then with 1-1000 bichlorid solution, or a saturated solution of boric acid; brushing the ulcer with carbolic acid, then covering it with cotton dipped in alcohol, drying it carefully and dusting on rather thickly bismuth subnitrate and starch powder, in equal amounts; a dressing consisting of a small pad is applied and held by a gauze bandage or by small strips of adhesive plaster. The elastic stocking is then put on. The powder is changed every morning by the patient, the wound is washed once every two or three days as stated above, inspected, and, if necessary, the carbolic acid and alcohol application is again made and the powder reapplied. The indications for the carbolic acid and alcohol applications are when the retrograde changes equal the reparative, or when the former exceed the latter. When the surface of the ulcer is covered with a layer of healthy granulation tissue composed of round cells closely packed together and supplied with a rich capillary network of blood vessels, the above treatment is all that is necessary. If the granulations are irregular, protruding above the edges of the wound, with ill-smelling purulent or seropurulent discharges, the surfaces should be curetted thoroughly before the above applications are made.

Southern California Practitioner, Los Angeles

September

65 Nature and Treatment of Hysteria. C. L. Allen, Los Angeles.
66 Care of the Ears of Infants and Children. W. H. Dudley, Los Angeles.
67 A Year's Work at the Eye Hospital of the United States Indian School at Phoenix, Ariz. A. Martin, Phoenix.
68 Open or Surgical Treatment of Fractures. C. P. Thomas, Spokane, Wash.

University of Pennsylvania Medical Bulletin, Philadelphia

September

69 The Patience of Surgery. A. P. C. Ashhurst, Philadelphia.
70 Sciatica as Caused by "Rheumatic" Myositis in the Gluteal Region. N. S. Yawger, Philadelphia.
71 Serous Meningitis. S. Leopold, Philadelphia.
72 The Medical Side of Benjamin Franklin. W. Pepper, Philadelphia.

Long Island Medical Journal, Brooklyn

September

73 Fakes and Fakirs in Medicine. M. B. Heyman, Central Islip, L. I.
74 Sanitary Investigation of Oyster Production and Distribution. H. D. Pease, Manhattan, N. Y.
75 Wassermann Reaction for Syphilis. J. I. Wiseman, Kings Park, New York.
76 Plea for the Prevention of Adenoids. J. E. Sheppard, Brooklyn.
77 Epigastric Incisions in Dealing with Cancer of the Breast. L. S. Pilcher, Brooklyn.

Journal of the Oklahoma State Medical Association, Muskogee

September

78 Diagnosis and Treatment of Diabetes. H. E. Breese, Henryetta, Okla.
79 Diseases of the Respiratory Tract. W. M. Sanger, Oklahoma City, Okla.
80 Prevention of Disease. T. F. Renfrow, Billings, Okla.
81 Etiology and Treatment of Inguinal Hernia. W. J. Frick and R. D. Irland, Kansas City, Mo.
82 What the Woman's Club Can Do in the Campaign Against Tuberculosis. J. M. Bryum, Shawnee, Okla.

American Journal of Physiology, Boston

September

83 *Influence of the Removal of Fragments of the Gastro-Intestinal Tract on the Character of Nitrogen Metabolism. III. Excision of the Stomach. A. Carrel, G. M. Meyer and P. A. Levene, New York.
84 Pharmacologic Action of Uranium. D. E. Jackson, Indianapolis.
85 Fate of Saccharose After Parenteral Introduction in Animals. L. B. Mendel and I. S. Kleiner, New Haven, Conn.
86 Concentration of Ammonia in the Blood of Dogs and Cats Necessary to Produce Ammonia Tetany. C. Jacobson, Chicago.
87 *Healing of Wounds in Denervated Skin Areas and Its Bearing on the Theory of Trophic Nerves. C. Jacobson, Chicago.
88 Separation and Estimation of Aspartic and Glutaminic Acids. T. B. Osborne and L. M. Liddle, Washington, D. C.
89 Congenital Thyroidism: An Experimental Study of the Thyroid in Relation to Other Organs of Internal Secretion. R. C. Hoskins, Boston, Mass.
90 *Prophylactic Action of Atropin in Immediate Anaphylaxis of Guinea-Pigs. J. Auer, New York.

83. Excision of the Stomach.—A previous communication by Levin, Manson, and Levene on the nitrogen metabolism after gastro-enterostomy, showed that when stomach digestion was lacking, the power of the animals to retain and to assimilate the nitrogen of the food was diminished. In the present experiments, Carrel, Meyer, and Levene have attempted to determine the effect of complete excision of the stomach. In one animal they found a high nitrogen retention in experiments performed early after the operation, but no retention in the experiments performed after the tenth week following the operation. They suggest that in this case not only the gastric secretion was missing but also the pancreatic and intestinal secretions were much reduced and at that period thhe absorbed protein had the character of parenterally introduced protein, i. e., it had undergone only very slight changes by digestion and hence was retained. They think that at the later period the pancreatic and intestinal digestions were restored to their normal power and that the characteristic effect of failure of stomach digestion was exhibited. In the second animal the stomach was completely removed and the experiments were begun on the twelfth week after the operation. Three experiments were performed on the animal and no nitrogen retention was noted in any of them. The necropsy revealed a hypertrophy of the upper end of the duodenum developing after the operation.

87. Healing of Wounds in Denervated Skin Areas.—Jacobson operated by cutting first the sensory nerve roots in pigeons and then noting the rate of healing of wounds made in the anesthetic area. Later the motor nerve roots were cut and similar observations made. The author sums up her results in the following conclusions: 1. the results of the experiments reported indicate no diminution in the rate of healing of wounds in a denervated (sensory or sensory and motor) skin area as compared directly with that in a normal area. 2. The variations in the results obtained by different investigators may be explained on the grounds of individual variation among animals. 3. It seems that so-called trophic disturbances may be due to vasomotor changes with increased susceptibility to infection or to the loss of protective reflexes from loss of sensibility to injurious agents.

90. Prophylactic Action of Atropin.—Auer finds that a prophylactic injection of atropin sulphate in guinea-pigs sensitized by the subcutaneous injection of horse serum saved 18 out of 25 from the lethal effect of the toxic injection; while out of 24 adequate controls only 6 survived. Stated otherwise: the death-rate with atropin was 28 per cent.; without atropin it was 75 per cent. These figures, Auer says, show the distinct therapeutic utility of atropin in immediate anaphylaxis.

Journal of the Indiana State Medical Association, Fort Wayne

September 15

91 Dermatitis Pediculoides Ventricosus. H. A. Ray, Grabill, Ind.
92 *Applying Thiersch Grafts to the Orbital Cavity. F. A. Morrison, Indianapolis.

92. Applying Thiersch Grafts to the Orbital Cavity.—Over the part to be covered, whether within or without the orbit, is laid a piece of sterile gutta-percha tissue and an exact pattern made of this surface by the use of small scissors. This pattern is now removed and laid aside for further use. Next a piece of gutta-percha tissue two or three inches square (for convenience of handling) is laid in a bowl of normal salt solution. The Thiersch graft is cut in the usual way but is allowed to remain on the razor blade and is transferred directly to the gutta-percha tissue. To effect this the tissue is removed from the salt solution and spread evenly on a sterile towel. The upper surface of this tissue must be kept quite moist to facilitate the even application of the graft. The razor blade carrying the graft is dipped gently into the normal salt solution to loosen the adhesion between them preparatory to the next step. The graft is

then applied, raw surface up, to the tissue by holding the edge with a small spatula and gradually drawing the razor backward and dislodging it. The spatula is now brought into play and all wrinkles carefully smoothed. Should any difficulty be experienced a few drops of water sufficient to float the graft may be dropped on its surface.

The gutta-percha tissue should then be lifted slowly by taking hold of one end and the excess of water on its surface allowed to drain away slowly. This will cause the graft to become intimately adherent to the surface of the tissue and permit handling without any fear of wrinkling or dislodgment. With a pair of small and sharp scissors the tissue and the adherent graft are cut at the same time to correspond to the size and shape of the pattern previously described. In case great accuracy is demanded the pattern may be placed beneath the tissue while this shaping is proceeding. The graft thus shaped, together with its companion piece of gutta-percha, is then placed face downward on the surface to be covered and pressed into place with the spatula or any convenient instrument. Here the two may be left in contact or if desired the tissue may be removed by gently insinuating the edge of a spatula.

Bulletin of the Johns Hopkins Hospital, Baltimore

October

93 The Life and Work of Lister. C. G. W. Judd, Baltimore, Md.
94 Decussation of the Pyramids—An Historical Inquiry. H. M. Thomas, Baltimore.
95 An Historical Sketch of Blood-Letting. J. T. Smith, Baltimore.
96 *Importance of a Thorough Teaching of Infectious Diseases of Childhood in the Medical Curriculum. C. F. von Pirquet, Baltimore.

96. Abstracted in THE JOURNAL, May 21, 1910, p. 1719.

Pennsylvania Medical Journal, Athens

September

97 Diagnosis and Surgical Treatment of Gall-Bladder Diseases. D. Guthrie, Sayre, Pa.
98 Is Induced Abortion Justifiable? If so, When? From the Religious View. A. R. Steck, York, Pa.
99 Is Induced Abortion Justifiable? If so, When? From the Legal View. G. H. Kain, York, Pa.
100 The Rights of the Unborn Child. W. S. Carroll, Erie, Pa.
101 Hypertrophy of the Adenoid and Other Tonsillar Glands as a Factor in Arresting Development of the Teeth and Alveolar Processes. S. M. Weeks, Philadelphia.
102 Relation of the Society Secretary to the Increase of Membership. L. B. Kline, Catawissa, Pa.
103 Value of the Secretary to the County Society. P. P. Brenneman, Lancaster, Pa.
104 Relation of the County Secretary to the Business of the State Society. W. R. Davies, Scranton, Pa.
105 Ethics and Business in Medicine. R. W. Bailey, Germantown, Pa.
106 The Problem of Gonorrheal Infection. R. T. Barnett, Lewistown, Pa.
107 Anesthetics: A Report of One Thousand Cases. F. Schill, Johnstown, Pa.
108 The Nostrum Cure. J. C. Jenkins, Lititz, Pa.

Gulf States Journal of Medicine and Surgery, and Journal of the Southern Medical Association, Mobile

September

109 Impress of English Thought on Medicine. F. A. Jones, Memphis, Tenn.
110 Serodiagnosis of Syphilis. A. Litterer, Nashville, Tenn.
111 *Rare Case of Appendicitis. H. T. Inge, Mobile, Ala.
112 Clinical Observations on Hemoglobinuric Fevers. W. H. Deaderick, Helena, Ark.
113 Pathology of Hemoglobinuric Fever. G. H. Whipple, Baltimore.
114 Digestive Physiology and Some of Its Clinical Bearings. J. T. Halsey, New Orleans, La.
115 Whooping-Cough. C. Thorington, Montgomery, Ala.
116 The Owen Bill for the Establishment of a Federal Department of Health, and Its Opponents. S. A. Knopf, New York City.

111. **A Rare Case of Appendicitis.**—This is a case of appendicocecal intussusception. The appendix was found to contain literally thousands of small round bodies that varied in size from a small shot to that of an English pea. They were detached one from another and from the inner appendix walls. They exhibited a pearly luster, were quite firm, opaque and elastic.

West Virginia Medical Journal, Wheeling

October

117 The Owen Bill and Its Opponents. S. A. Knopf, New York.
118 Uncinariasis. J. E. Burns, Wheeling.
119 Alcohol Only a Narcotic Poison. G. H. Benton, Chester.
120 Spina Bifida and Congenital Tumor of the Sacrolumbar Region. J. Schwinn, Wheeling.
121 Early Diagnosis of Incipient Tuberculosis. J. L. Pyle, Chester.
122 Uses of Glycerin in Medicine. G. D. Lind, Greenwood.
123 Appendicitis as a Complication of Pregnancy. S. D. Hatfield, Iaeger.

Archives of Pediatrics, New York

September

124 *Clinical Features of Epidemic Poliomyelitis. L. E. Holt, New York.
125 *Chronic Rheumatoid Arthritis of Childhood. H. Koplik, New York.
126 *Bacterial Vaccines in Children's Diseases. J. Howland and B. R. Hoobler, New York.
127 Rôle of the Visiting Nurse in the Reduction of Infant Mortality. C. Herrman, New York.
128 *Cytodiagnosis of Tuberculous Meningitis. C. H. Dunn, Boston.

124. Abstracted in THE JOURNAL, June 4, 1910, p. 1889.

125. **Chronic Rheumatoid Arthritis.**—Koplik thinks that in children what has been described as arthritis deformans so closely resembles another form, the so-called Still's form of rheumatoid arthritis, that they both are probably the same form of disease and are peculiar to children alone. He has been led to this conclusion by a study of a number of these cases of rheumatoid affection of the joints. Six such cases are reported.

126. Abstracted in THE JOURNAL, June 11, p. 1996.

128. Abstracted in THE JOURNAL, June 4, p. 1889.

Journal of Advanced Therapeutics, New York

September

129 Static Treatment of Rheumatoid Arthritis. W. D. McFee, Haverhill, Mass.
130 Radiant Light in Treatment of Rheumatoid Arthritis. S. Abbott Franklin Mass.
131 Heat in Treatment of Rheumatoid Arthritis. G. Z. Goodell, Salem, Mass.
132 Roentgen-Ray Treatment of Rheumatoid Arthritis. F. B. Granger, Boston.
133 Treatment of Rheumatoid Arthritis. C. J. Walsh, Cambridge, Mass.
134 Dietetics in Rheumatoid Arthritis. W. H. Hitchcock, Boston.
135 Rheumatoid Arthritis Treated by Manual Therapy. E. C. Thompson, Roslindale.
136 Case of Chronic Congestion of the Prostate. H. F. Pitcher, Haverhill, Mass.
137 Effects of Electric Currents on Blood Pressure. E. Sayer, England.

American Journal of Public Hygiene

August

138 *Improvement of Public Health Through Teaching of Hygiene in the Elementary Schools. I. F. Hyams, Boston.
139 *Teaching of Hygiene and Sanitation in the Schools. J. W. Ritchie, Williamsburg, Va.
140 *Teaching of Hygiene in Normal Schools. A. de Garay, Mexico City, Mexico.
141 Organization of the Public School Hygiene Service in the Federal District of Mexico. A. Pruneda, Mexico City, Mexico.
142 Instructive Inspection. E. H. Richards, Boston.
143 Value and Scope of Exhibitions and Museums. A. M. Wilson, Boston.
144 Sanitary Education in California by Means of Traveling Railroad Exhibit. H. O. Jenkins.
145 *Scope and Nature of Publicity as a Factor in Popular Educational Movements in Public Health. J. A. Kingsbury, New York.
146 *Necessity of Efficient Means of Checking Syphilitic and Gonorrheal Contamination. J. Brena, Zacarracas, Mexico.
147 *Necessity of Isolating Prostitutes Who Suffer from Syphilis. J. Huici, Mexico City, Mexico.
148 *Vaccinal Syphilis. F. Bernaldez, Mexico City, Mexico.
149 *Second Decennial Revision of the International Classification of Causes of Death. C. Wilbur, Washington, D. C.
150 *Cooperative Efforts in the Supervision and Control of Milk Supplies. F. D. Bell, New York.
151 *How an Enlarged and More Uniform National Health Administration May Be Secured. J. Y. Porter, Key West, Fla.
152 *Maritime Prophylaxis of Pulmonary Tuberculosis. A. Matienzo, Tampico, Mexico.
153 *Prophylactic Measures in Exanthematic Typhus. G. Escalona, Mexico City, Mexico.
154 Relations Between the Sanitary and Politico-Administrative Authorities in the Mexican Republic. D. Orvananos, Mexico City, Mexico.
155 *Facts Indicating that Malaria May Be Spread Through Other Agencies Than the Anopheles Mosquito. J. Chico, Guanajuato, Mexico.
156 *Investigation of the Extent of the Bacterial Pollution of the Atmosphere by Mouth-Spray. C. E. A. Winslow and E. A. Robinson, Boston.
157 Sanitary Education of the People. G. T. Swarts, Providence, R. I.
158 Utilization of Bacteriologic and Microscopic Methods in Inspection of Milk. J. O. Jordon, Boston.
159 Organization of Municipal Health Department at Vera Cruz. M. S. Inglesias, Vera Cruz, Mexico.
160 *What May Be Done to Improve the Hygiene of the City Dweller. S. A. Knopf, New York.
161 Police Health Census of the City of Baltimore, 1906. C. H. Jones, Baltimore.
162 Studies on Inhibition, Attenuation and Rejuvenation of *B. Coli*. F. E. Hale and T. W. Mella, Boston.

163 Microscopic Investigation of Hematozoon Malariæ. O. Gonzalez-Fabela, Mexico City, Mexico.
164 Bacteriologic Methods for Air Analysis. J. Weinzirl and M. V. Fox, Seattle, Wash.
165 Pancreatin-Bile Salt Medium for Detection of *B. Coli* in Water. L. R. Swain, Mount Kisco, N. Y.
166 Longevity of *B. Diphtheriæ* on Swabs. F. H. Slack, B. L. Arms and E. M. Wade, Boston.
167 A Standard Fumigating Outfit for a Single Room. A. W. Freeman, Richmond, Va.
168 Importance of Standard Methods for Testing Disinfectants. W. Dreyfus, New York.
169 An Analytic and Epidemiologic Study of Farm Water Supplies. K. F. Kellerman, Washington, D. C., and H. A. Whittaker, Minneapolis, Minn.
170 Control of Algal Pollution in the Reservoirs of the Canal Zone. K. F. Kellerman, Washington, D. C., and J. O. Meadows, Oconomowoc, Wis.
171 Artificial Milk: A Substitute for Ordinary Milk as a Laboratory Medium. H. W. Hill, Minneapolis.
172 Importance of Contact Infection. C. V. Chapin, Boston.
173 Modern Methods of Quarantine. M. J. Rosenau, Boston.
174 Personal Hygiene. P. G. Stiles, Boston.
175 Veterinary Hygiene. W. L. Beebe, St. Cloud, Minn.
176 Sanitary Engineering Notes. R. S. Weston, Boston.
177 Biologic Laboratory Notes. F. P. Gorham, Boston.

138, 139, 140, 145 to 148, and 150 to 153. Abstracted in THE JOURNAL, Nov. 27, 1909, pp. 1843 to 1846.

149. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1761.

155. **Spread of Malaria Through Other Agencies Than the Anopheles Mesquito.**—Chica claims that in Guanajuato popular opinion uniformly accuses the fruits of being the cause of malaria in its worst aspect and people who go to Tierra Caliente ("Warm Land") as the coast is colloquially called among them, assert that if they keep clear of fruits and add brandy to the water they may remain free of malaria. Up to this time the search for malaria germs in fruits has yielded but negative results; but he thinks one thing remains: the anopheles is not the only vehicle for the spread of malarial diseases.

156, 160. Abstracted in THE JOURNAL, Nov. 27, 1909, pp. 1844 and 1845.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

September 17

1 *Spinal Analgesia by the Stovain-Strychnin Method of Jonnesco. L. McGavin.
2 Anesthetizing Patients for Operations on the Throat, Nose and Accessory Sinuses. S. V. Stock.
3 State Insurance and the Poor-Law Commission. J. H. Keay.
4 State Invalidity and Sick Insurance. E. R. Fothergill.

1. **Spinal Analgesia.**—McGavin tried this method in eighteen cases with almost uniformly disappointing results. He says that four successful cases of high puncture serve, so far as analgesia above the phrenics is concerned, to show that the method has at least some element of possibility in it; it is, however, uncertain, imperfect at present, and of doubtful value in replacing general anesthesia. The unsuccessful cases of high puncture show it to be fraught with danger, and from the human standpoint unjustifiable. The cases of low puncture serve to show very little else than that strychnin can be injected into the spinal canal without inducing spastic symptoms, and that it undoubtedly results in a shortening of the period of analgesia usually resulting from the use of stovain alone. The effects of the analgesic on the cranial nerves appear to be irregular. So far as McGavin has been able to see, the first, second, third and fourth remain unaffected; the fifth is at times under control, as is also the seventh; the sixth, eighth, ninth, tenth and twelfth are unaffected, while the eleventh may or may not be paralyzed. He can see no object in adding strychnin in cases of low spinal analgesia, since he has found no difficulty in carrying out operations under stovain analgesia without it, even when such analgesia has been pushed to the level of the clavicles.

Lancet, London

September 11

5 Vaccine Therapy: Administration, Value and Limitations. A. E. Wright.
6 *Chondrocarcinoma of the Testicle. W. Sheen, H. A. Scholberg and R. L. M. Wallis.
7 Enucleation of Tonsils with the Guillotine. S. S. Whillis and F. C. Pybus.
8 *Verminous Appendicitis. H. A. Lediard.
9 Toxicology of Carbon Monoxid. W. J. Wilson.
10 Ventilation of Ships, Particularly Merchant Ships. W. E. Home.

6. **Chondrocarcinoma of the Testicle.**—Wallis' patient was a man, aged 30, with a strong tuberculous family history, three sisters and one brother having died from phthisis between the ages of 19 and 30. The patient was struck by a hockey stick on the left testicle in February, 1908. He had pain, stopped playing for two minutes, then finished the game. Swelling of the testicle appeared at once and gradually grew larger, and he wore a suspensory bandage; he had no pain and did not lose flesh. In February, 1909, the left scrotum contained a smooth, ovoidal mass, roughly as big as the adult fist, hard, uniform, elastic, not tender and not translucent. Veins were not dilated, testicular sensation was retained at the upper and front part of the swelling, and there was no thickening of the cord. Rectal examination showed nothing abnormal. The testicle and cord were removed through an inguinal incision, the inguinal canal being opened to its outer end. The cord was apparently normal. The patient left the hospital in 14 days with the wound soundly healed. Four months later he noticed an abdominal swelling, hard, elastic, smooth, prominent, slightly tender, reaching from the umbilicus to the symphysis, and from the left anterior superior spine to three inches to the right of the middle line. Slight frequency of micturition was present. There was a slight yellow tinge on the cheeks. The patient died two months later. The tumor was an embryoma in which the hypoblastic layer had undergone a malignant change giving a spheroidal-celled carcinoma.

8. **Verminous Appendicitis.**—A girl, aged 7, complained of abdominal pain and distention, fever, vomiting and tenderness in the appendix region. The appendix region was more tender, and persistently tender, than any other part of the abdomen, but the pain was diffused over the abdomen and the distention was suggestive of general peritoneal infection. The child was submitted to operation. The cecum was found to be inflamed, but no lymph was present. The appendix, when brought to the surface, was swollen and redder than normal. It was not until the appendix was slit up that a nest of actively moving threadworms was seen, some of which escaped. They were the oxyuris vermicularis. After the operation the usual remedies were given, and a careful search was maintained for a week or more, but no sign of a worm was visible in the motions, which were washed, strained and examined with a lens. Films of blood taken showed a marked polymorphonuclear leukocytosis, but the eosinophil cells were not increased in number, being rather fewer than usual.

Journal of Tropical Medicine and Hygiene, London

September 15

11 The Investigation of Pellagra. L. W. Sambon.

Australasian Medical Gazette, Sydney

August

12 Trachoma in Western Queensland. E. T. Smith.
13 Family Syphilis. R. H. Marten.
14 *Syphilis of the Central Nervous System. C. T. Champion de Crespigny.
15 Exclusion of Tuberculosis in Diagnosis. F. C. Griffiths.
16 *Hysterectomy and Appendectomy in a Patient Twelve Years Old. W. Hoare.
17 Suggestions for Better Organization of the Profession. F. W. Harlin.
18 Value of Pituitary Extract. E. J. R. Holder.
19 Typhoid Bacillus-Carrier Detected in Connection with an Epidemic of Typhoid Fever. C. S. Willis.

14. **Syphilis of the Central Nervous System.**—DeCrespigny examined the cerebrospinal fluid of 50 patients suffering from various forms of nervous disease, by means of the Ross and Jones reaction. The results of the investigation are as follows:

(A) The reaction was positive in the following cases: (a) Parasyphilis: general paralysis, 6; tabes, 8. (b) Tertiary syphilis: cerebral syphilis, 5; syphilitic paraplegia, 1. (c) Probable cerebral syphilis, 2. (d) Non-syphilitic: tuberculous meningitis, 1; secondary carcinoma in vertebræ, 1; lead encephalitis, 1.
(B) The reaction was negative in the following: (a) Probable cerebral syphilis, 2. (b) Non-syphilitic: insanity, 4; vascular cere-

bral lesions, 4; traumatic concussion, 1; neurasthenia, 1; uremic hemiplegia without vascular lesion (verified at autopsy), 1; delirium due to pyemia, 1; idiopathic epilepsy, 2; paralysis agitans, 1; Ménière's syndrome, 1; hydrocephalus, 1; disseminated sclerosis, 2; idiopathic spastic paraplegia, 1; pernicious anemia with combined degeneration, 1; transverse myelitis (unknown cause), 1; syringomyelia, 1; plumbic peripheral neuritis, 1. DeCrespigny regards the test as being of considerable help in the diagnosis of obscure nervous affections.

He concludes: 1. Absence of reaction negatives the existence of general paralysis or tabes. 2. Its presence usually means syphilis of the central nervous system in the absence of tuberculous meningitis or malignancy. 3. Deeply situated cerebral syphilis does not necessarily produce the reaction. 4. Tuberculous meningitis may give the reaction even with a clear fluid. 5. The simplest explanation of the test seems to be as follows: Rapid degeneration of cells in the neighborhood of the cerebrospinal space sets free in the fluid a substance of the globulin class. In the absence of acute inflammation, syphilis, tubercle and cancer are the conditions most likely to cause this degeneration, and consequently to give rise to the reaction.

16. **Hysterectomy and Appendectomy.**—The patient, aged 11 years and 6 months, was abnormally developed. The mammæ were well-formed; pubic hair, external genitals and general contour were those of a young woman. Menstruation, though free at first, was apparently normal; there were no clots and absolutely no pain. A fortnight after the first period she again menstruated and the flow continued for a fortnight. Treatment proving ineffective, it finally became necessary to remove the uterus, sections of which showed typical fibromyoma structure.

Journal of Obstetrics and Gynecology of the British Empire, London

September

20 *Induction of Labor and Manual Dilatation of the Cervix Uteri. H. M. Little.
21 *Ovarian Pregnancy with Diffuse Intraperitoneal Hemorrhage. A. W. W. Lea.
22 Conservative Operations on the Internal Female Genital Organs. E. B. M. Haarbleicher.

20. **Induction of Labor.**—Little says that the necessity for emergency measures in obstetrics varies inversely with the care given to the patient during pregnancy. Timely induction of labor will prevent many mishaps incident to the progress of most of the usual or unusual complications of pregnancy. Such induction is best accomplished by the modification of Krause's method—the use of the large soft bougie introduced with the aid of the stylet. Pelvic contraction is not to be considered as an indication for induction of labor. Prolongation of pregnancy, on the other hand, is more frequently an indication for its employment. The passage of the bougie and the introduction of the pack will usually bring on pains within a few hours, and the labor may be allowed to proceed, or it may be terminated artificially. When the cervical canal is obliterated its dilatation by Harris' method is usually easy and, when carefully done, is safe. The danger from hemorrhage and infection is slight; laceration of the cervix will occur frequently, and such laceration should be immediately repaired. Apart from the fact that the method can be employed without assistance other than the anesthetist and nurse, its advantages are its universality of application, its simplicity, the limitation of the force employed to the fingers of one hand, and, finally, the ability of the hand to recognize and estimate the resistance to be overcome.

21. **Ovarian Pregnancy.**—Lea reports a case of early rupture of an ovarian pregnancy causing symptoms of diffuse intraperitoneal hemorrhage.

Dublin Journal of Medical Science

September

23 Therapeutic Qualities of Calcium Permanganate. G. A. Stephens.
24 Mouth-Breathing. M. A. Diemont.
25 Present Position of Tuberculin Therapy. W. Leggett.

Australian Medical Journal, Melbourne

August

26 Study of Monotremes and Marsupials to Determine Changes in the Structure of the Cecum and Its Vermiform Appendix. W. Stapley and W. MacKenzie.
27 Surgical Aspects of Dyspepsia. G. A. Syme.
28 *Medical Treatment of Cholelithiasis. A. V. M. Anderson.
29 *Medical Treatment of Pyloric Obstruction. J. F. Wilkinson.
30 Surgery of Gastric Ulcer. D. Shields.
31 "Indigestion" from a Surgical Standpoint. J. T. Mitchell.
32 Quinsy. T. K. Hamilton.
33 Fatal Cases of Hematemesis. W. E. Wilson.
34 Problems of the Milk Supply. S. S. Argyle.
35 *Abnormal Ribs as a Cause of Lumbar Pain. S. S. Argyle.

28. **Medical Treatment of Cholelithiasis.**—Anderson recommends the use of hexamethylenamin together with the other dietetic and hygienic measures in early cases of cholelithiasis, or in cases where the indications for operation are not urgent. If operation has to follow, the antiseptic action of the drug on the bile may be helpful in preventing septic complications.

29. **Treatment of Pyloric Obstruction.**—Wilkinson tries to show that, after all, surgical treatment of these patients has not yet been of a sufficiently satisfactory character to displace the older, carefully considered and adopted medical means.

35. **Abnormal Ribs as a Cause of Lumbar Pain.**—The patient, a man aged 45, complained of pain in the left renal region for some years. He was an amateur swimmer, and frequently noticed that after a swim the pain in the back was worse. There was no history of hematuria, albuminuria or pyuria. An examination of other negatives revealed to Argyle the presence of abnormal ribs in 6 cases out of 143 radiographic examinations of the renal region. An examination of these plates showed that in some cases the extra rib exists on one side only, while on others there are lumbar ribs on both sides. In all cases, the transverse processes of the first lumbar vertebræ are rudimentary in character, or rather resemble those of the dorsal vertebræ.

Archives des Maladies de l'App. Digestif, Paris

August, IV, No. 8, pp. 433-576

36 Roentgen-Ray Examination of Gastric Ulcer. (Radioscopie des ulcères de l'estomac.) Cerné and Delaforge.
37 *Study of One Hundred and Four Cases of Cancer of the Esophagus and Cardia. L. Lamy.

37. **Cancer of the Esophagus and Cardia.**—In 78 of the 104 cases of cancer of the esophagus reported, progressive difficulty in swallowing was the first sign of trouble. There was no pain in 61 cases, but in 5 cases pain preceded the dysphagia by a few days and in 11 cases they came on together. In 29 cases there was no pain until a month or two after the difficulty in swallowing had developed. In 19 of the 40 cases with pain it occurred only while food was being swallowed; in the others it was continuous. Regurgitation was the rule; it was absent in only 17 of the total 104 cases. The appetite remained good in 70 per cent. and there was distaste for meat in only 4 cases. The cancer proved fatal in most cases between 6 and 12 months, but in a few, in from 2 to 4 months. In 7 cases the inability to swallow the food came on suddenly, the patients being apparently in perfect health; one was a man of 32. In 2 of these cases intense pain accompanied the sudden dysphagia, which in 1 case was accompanied by profuse salivation. In 8 cases the sudden difficulty in swallowing proved permanent and no solid food could be swallowed thereafter; in 2 other cases neither solids nor fluids could be swallowed. Cancer is differentiated from spasm of the esophagus by the rapid sequence of the disturbances, gastrostomy becoming necessary in from 1 to 4 months, while spasm of the esophagus may persist for years without requiring this. Copious salivation and mucous vomiting are aids in diagnosing. In one case a woman of 28 had an evident spasm of the esophagus but its persistence, notwithstanding great fluctuations, indicated an underlying organic lesion, confirmed by direct visual inspection and death 5 months after the first symptoms. In 6 cases the cancer did not prove fatal for from 1 to 2½ years. Twelve of the patients developed tuberculosis. The report issues from Mathieu's service at Paris.

Archives des Maladies du Cœur, etc., Paris

September, III, No. 8, pp. 529-576

38 Pathologic Changes in the Ganglion Cells of the Heart. L. Stiénon.
39 Aneurysm at the Base of the Left Ventricle Coinciding with Subacute Parietal Endocarditis. J. Bret and C. Roubler.

Archives de Médecine des Enfants, Paris

September, XIII, No. 9, pp. 641-720

40 *Malaria in Children. J. P. Cardamatis.
41 Bacteriology of Noma. M. Breuer.
42 *Fatigue as Cause of Nocturnal Enuresis in Children. N. B. Nicoletopoulos.
43 Multiple Exostoses in Three Children. Le Pontois.
44 *Tenia Nana* in Children. J. Comby.

40. **Malaria in Children.**—A somewhat similar article by Cardamatis was abstracted in THE JOURNAL, Oct. 9, 1909, p. 1225. His further experience confirms the assumption that young children are immune to malaria, and that the parasites are unable to traverse the placenta. In 20 cases in which the mother's blood swarmed with them none was in the infant's blood. It seems evident that there is some antitoxic substance on the fetal side of the placenta which not only kills the hematozoa arriving from the maternal blood but confers immunity on the infant for a year or two. In 838 children with malaria, only 87 were under 2; the tertian form of malaria predominates among children as among adults in Greece, but all forms are encountered at various ages. In 1,287 cases fully 75 per cent. were of the chronic form. The spleen is not always much enlarged in the children, even with grave cachexia.

42. **Fatigue as Factor in Nocturnal Enuresis.**—In a number of cases encountered by Nicoletopoulos the enuresis was evidently the result of sleep so profound by the exhausted children that the desire to urinate did not awake them as under ordinary conditions. In the cases reported, a little care on the part of the parents and children to prevent over-fatigue speedily cured the tendency to enuresis.

Lyon Médical, Lyons

August 28, CXV, No. 35, pp. 317-356

45 Tuberculous Cavities in a Three-Months'-Old Infant. Collet and Delachanal.

September 4, No. 36, pp. 357-396

46 The Individual School Sanitary Record Book for the School Children at Lyons. (Le carnet sanitaire individuel.) C. Lesieur.

Presse Médicale, Paris

September 3, XVIII, No. 71, pp. 665-672

47 Protracted Subacute Cerebrospinal Meningitis. (La méningite cérébrospinale prolongée à forme cachectisante.) R. Debré.

Semaine Médicale, Paris

September 7, XXX, No. 36, pp. 421-432

48 Evolution of Medicine from 1830 to 1870. R. Lépine.
49 *Cardiolysis in Treatment of Adhesive Pericarditis. J. L. Roux-Berger.

September 14, No. 37, pp. 433-444

50 *General Peritonitis from Unknown Cause. (Péritonites cryptogénliques.) R. De Bovis.

49. **Operative Treatment of Adhesive Pericarditis.**—Roux-Berger reviews the history and applications of cardiolysis or precordial thoracectomy as it is better entitled, stating that there are records now of over 28 cases in which this operation has been done, besides 2 from his own experience. In 21 cases the results were favorable, the improvement being evident even during the course of the operation in some of the patients. In 7 cases the operation failed to benefit, and study of these cases shows that the intervention is applicable only in the cases of actual adhesive mediastino-pericarditis, and only when the symptoms observed depend on the adhesion of the heart to the chest wall. Unless the myocardium is in good condition there is little prospect of much relief from the operation. This can be estimated by the strength and regularity of the pulse and by the influence on the disturbances in the circulation of rest in bed, dieting and heart stimulants. The persistence unmodified of dyspnea, cyanosis and edema, notwithstanding vigorous medical treatment, should contraindicate the operation as proving that it has little chance for success. His review embraces European literature only.

50. **General Peritonitis from an Unknown Cause.**—De Bovis comments on the way in which the field of idiopathic peritonitis is being reduced by discovery of previously unsuspected causes for peritonitis. With the exception of a few still unexplained cases, such as Cuff's case of primary pneumococcus peritonitis, it seems evident that peritonitis is always secondary to some lesion elsewhere, but it may be preceded by a general infection—most often due to the pneumococcus or streptococcus—or it may be secondary to some abdominal lesion. In the case of general infection a laparotomy is of doubtful utility. In any event, it should be restricted to simple evacuation of the pus. When the peritonitis is secondary to some abdominal lesion its gravity depends on the character of the latter. If migration of germs from the stomach into the gastrohepatic omentum has led to glandular suppuration, as in Dahlgren's case, it is evident that the peritonitis may be threatening and an early laparotomy is usually indicated. But if, on the other hand, some mild enteritis seems to be the cause of the diffuse peritonitis and the latter seems moderate, expectant treatment may be justified; Lennander advocates this. In case there is severe paralysis of the bowel, enterotomy may be applied with multiple Witzel's fistulas or lavage of the intestine. Monks successfully applied the latter in a streptococcus peritonitis, flushing the intestinal canal with a salt solution through multiple enterotomy openings. De Bovis reviews in detail the recent literature on this so-called idiopathic peritonitis.

Berliner klinische Wochenschrift

August 29, XLVII, No. 35, pp. 1609-1648

51 Ehrlich's "606" in Syphilis. (Kritische Bemerkungen zur Ehrlich-Hata-Behandlung.) A. Blaschko.
52 Lipoid Substances in Blood and Urine in Tuberculosis. (Ueber den biologischen Nachweis lipoider Substanzen durch die Komplementbindungsmethode im Blut und Harn bei Tuberkulose und deren Bedeutung.) J. Citron and D. Klinkert.
53 Biology of Tubercle Bacilli. III. H. Aronson.
54 *Pathogenesis of Diarrhea in Exophthalmic Goiter and Diagnostic Importance of Ferment Content of Stools. R. Balint and B. Molnar.
55 Two Cases of Hypernephroma. (Zwei Tumoren aus Nebennierenmarkgewebe.) S. Suzuki.

September 5, No. 36, pp. 1649-1692

56 Stab Wound of Large Vessel. (2 Fälle von Stichverletzung grosser Gefässe.) S. Hadda.
57 Theory and Practice in Tuberculin Treatment. (Ueber die Beziehungen zwischen der Theorie der Tuberkulinwirkung und der Tuberkulintherapie.) A. Wolff-Eisner.
58 The Wassermann Reaction after Treatment of Syphilis with Ehrlich's "606." C. Lange.
59 Laboratory and Clinical Research on the Wassermann Reaction. J. A. Finkelstein and W. J. Dawydow.
60 Vaccine Therapy of Gonorrheal Complications. W. Friedländer and H. Reiter.
61 Present Status of Cesarean Section. (Zur Kaiserschnittfrage.) E. Runge.

54. **Diagnostic Importance of Ferments in the Feces.**—Balint and Molnar conclude from their study of the diarrhea in exophthalmic goiter that it was not due to insufficiency of the external secretion of the pancreas. On the contrary, this secretion seemed to be unusually copious. The stool resembled that with pancreatic insufficiency but the large ferment content contradicted this assumption. The phenomena observed suggest that there is an overproduction of a peristaltic hormon in exophthalmic goiter which would explain the azotorrhea and steatorrhea with abundance of ferments. It seems plausible that the excessive functioning of the thyroid is responsible for this, especially as obstinate constipation seems to be the rule with myxedema. Further research showed that tests for the diastase in the stool are useful in diagnosis of cancerous obstruction of the outlet to the pancreas. In conclusion, they urge further study of the physiologic secretion of the pancreas which may throw light on many dark points in the pathology of the pancreas. It is better for this purpose to take the total diastase for the 24 hours as the standard.

Deutsche medizinische Wochenschrift, Berlin

September 8, XXXVI, No. 36, pp. 1641-1688

62 Indications for Pubiotomy. (Die Berechtigung der Pubeotomie.) P. Kroemer.
63 *Toxemia of Pregnancy. (Schwangerschaftstoxämie.) J. Hofbauer.
64 *Bronze Diabetes. W. O. Ridder.
65 Slight Clinical Value of Pinoff's Levulose Reaction in the Urine. F. Fleischer and K. Takeda.
66 Suffocation Leukocytosis. (Zur Erstickungsleukozytose.) P. Fraenckel and Hochstetter.
67 *Tuberculin in Treatment of 682 Patients with Open Pulmonary Tuberculous Lesions. E. Löwenstein.
68 *Normal Skiagraphs of the Heart. ("Normalaufnahmen" des Herzens und ihre klinische Bedeutung.) W. Bloch.

69 *Influence of Momburg Belt Constriction on the Heart and Circulation. J. Tornai.
70 Sterilizing Action of Tooth Pastes. (Desinfizierende Wirkung einiger gebräuchlicher Zahnpasten.) R. Bassenge and E. Seiander.
71 *Castor Oil Plant in Ancient Egypt. (Verwendung der Rizinuspflanze in der Medizin der alten Aegypter.) G. A. Wätzold.

63. **Pregnancy Toxemia.**—Hofbauer has been studying the toxicity of the placenta by anaphylaxis reactions; the results show that there does not seem to be any great biologic difference between the albumin of the mother, of the fetus and of the placenta. At the same time the development of the fetus and its membranes reacts on the maternal organism in such a way that severe auto-intoxication may result. This is evident in the degenerative processes in the kidney and liver, liable even with a normal pregnancy; also a hyperplastic process occurs in the glands with an internal secretion. Eclampsia and pernicious vomiting are the extreme manifestations of the toxemia of pregnancy on which histologic and biochemical research have thrown much light and now point the way to prophylaxis and treatment.

64. **Bronze Diabetes.**—Ridder had opportunity to observe the development of bronze diabetes in a man of 35, four years after pigmentation on the extremities and slight edema of the legs with some physical depression. A year later, signs of liver disease became apparent and it was diagnosed as hypertrophic cirrhosis of the liver with brownish pigmentation of the skin; there was no diabetes or intolerance of sugar. This condition persisted for nearly 2 years when typical bronze diabetes developed and the patient died in 4 months. Ridder ascribes the bronze diabetes to injury of the liver cells from some unknown cause. The pancreas measured 19 by 3 by 2 cm. and was bronze colored and of a tough consistency.

67. **Tuberculin Treatment in Open Pulmonary Tuberculosis.**—Löwenstein states that 989 patients have been given specific treatment at Beelitz since the beginning of 1908 and that 682 received the Koch tuberculin alone. The tubercle bacilli vanished from the sputum in 57.94 per cent. of the 409 patients treated with old tuberculin; in 42.05 of the 204 treated with new tuberculin and in 55.07 per cent. of the 69 treated with both combined. This specific treatment was restricted to patients free from complicating affections and the old tuberculin was given the preference when a tendency to production of connective tissue was apparent and in the cases with recent destructive processes, the aim being to help the organism in throwing off dead tissue and walling off the lesions by a vigorous local reaction. The expectoration was promoted by inhalations, etc., to help in throwing off the infectious material; the local reaction, he states, is one of the most important curative factors in the response to tuberculin under these conditions. The new tuberculin was given the preference when it was necessary to avoid much of a local reaction, especially with extensive destructive processes with much breaking down of tissue. The patients were about equally divided among the various stages of the disease.

68. **"Normal" Skiagraphs.**—Bloch accepts as progress the system of standard radioscopy with the tube exactly 70 cm. from the body, on the median line, for Roentgen examination of the heart. This does not give the actual size of the heart, but it supplies a standard which is much more instructive for purposes of comparison. The exact measurements are facilitated by an L square, one arm on the median line and an adjustable arm pivoting about the center of the horizontal arm to outline the outer margin of the side of the heart, a graduated circle at the base of the pivoting arm indicating the number of degrees in the angle thus formed. As the skiagraphs are always taken under the same conditions they can be superposed for estimation of the progress under treatment in each case and for comparison with normal findings.

69. **Influence of Momburg Belt Constriction on the Circulation.**—Tornai has applied the Momburg technic in 20 cases, merely to study the effect on the heart and circulation. The subjects were mostly young and with normal circulation and nervous system or with well-compensated heart defects. In every case the number of systoles and the blood-pressure were notably increased by the procedure. As the constricting belt was removed, the pulse grew weaker, in some cases becoming very weak and irregular. His experience suggests the necessity for careful examination of the functional capacity of the heart beforehand, testing it by the Katzenstein or other reliable method. Any suspicion of heart disease or arteriosclerosis, exophthalmic goiter, nephritis or plethora should contra-indicate the method. He tabulates the findings in one typical case as recorded at 10 intervals.

71. **The Castor-Oil Plant in Ancient Egypt.**—Wätzold gives some quotations from a recently published translation of the Berlin papyrus, showing the extensive use made of the ricinus in ancient Egyptian medicine. The crushed seeds seem to have been used for local application in headache and to cure baldness, and many references are to the purgative action of the oil. He adds that there are many of these ancient papyrus manuscripts awaiting translation in the Berlin museum, which are sure to contain much of interest to medical men. The one just published dates from fifteen centuries before Christ.

Jahrbuch für Kinderheilkunde, Berlin

September, LXXII, No. 3, pp. 243-372

72 *Suppuration in Infants' Urinary Tract. (Ueber die eitrigen Erkrankungen der Nieren und Harnwege im Säuglingsalter.) H. Thiemich.
73 Antibodies for Diphtheria Toxin in Human Serum. (Gehalt des menschlichen Serums an Schutzkörpern gegen Diphtherietoxin.) M. Karasawa and B. Schick.
74 The Ferments and the Absorption of Fat in Infants. (Fermentuntersuchungen und Fettresorption beim Säugling.) E. Hoffmann.
75 Congenital Stenosis of the Pylorus in Infants from Disturbances in Development of the Gastro-Intestinal Tract. F. Toporski.
76 *Study of the Heart Functioning in a Case of Extrathoracal Heart. (Untersuchungen über die Herzfunktion an einem Fall von Ectopia cordis congenita.) M. Pekar and E. Tezner.
77 The Nourishment for and Weight of Nursing Women. (Gewichtsbestimmungen während einer Stillperiode nebst Bemerkungen über Nährmittel für Stillende.) M. Weissbart.
78 Prognosis and Symptomatology of Inherited Syphilis in Infants. (Hereditäre Lues im Säuglingsalter.) L. Heine.

72. **Suppurative Processes in Kidneys and Urinary Passages in Infants.**—Thiemich has encountered a number of cases of suppuration in the urinary apparatus in young infants. The trouble was a pyelocystitis and generally of hematogenic origin. Pyelocystitis seems to be of a milder nature than pyelonephritis in infants; the latter, in his experience, occurred only in very ill infants with very low vitality. The urine does not accumulate in the infant's tiny kidney pelvis to such an extent as in adults, and the passage can be effectually flushed by artificially induced diuresis. But this, even with antiseptics, does not seem to influence materially a pyelonephritis as the urine does not flush the foci in the kidney tissue. As they do not tend to confluence but rather to spontaneous healing by absorption, not much benefit can be anticipated from surgical measures, especially in view of the difficulty in diagnosing multiple abscesses in the infant kidney and the depressed state of the child thus affected, even apart from its kidney trouble. Treatment therefore should be directed to the underlying cause. If this succeeds, and dietetic measures here are the main reliance, then the pyelonephritis may be likewise arrested and even heal. In one of his two cases of the kind the child succumbed to the progress of its dyspeptic disturbances which it proved impossible to check; necropsy showed well-advanced healing processes in the kidneys. In the other case the child was restored to health on breast milk and the urine findings showed the progress to a complete cure. The child's illness lasted for several months but seemed to be closely and exclusively connected with the kind and success of the dietetic measures, the influence of the urinary affection being scarcely perceptible. In several of his cases there seemed to be some connection between the exudative diathesis and the urinary disease. The possibility that the healed pyelonephritis or persisting latent bacteriuria may cause trouble in later life must not be forgotten; this may be the source of pyelitis in adults in some cases. His necropsy findings indicate that the kidney becomes infected by the creeping up of an infectious process in the urethra in girls, but in boys the infection is probably by way of the blood. He reports the details of 5 cases in male and 3 in female infants with 3 other cases

in female infants who had died from pneumonia and necropsy unexpectedly revealed a suppurative process in the kidneys—the multiple abscesses were as extensive in this latter group as in any of the others.

76. **Heart Functioning with Extrathoracal Heart.**—The heart was entirely outside of the body and presented a rare opportunity for study of the functioning of its various parts, the apex lying outside on the left hypogastrium. The third day after birth fibrinous pericarditis developed, proving fatal on the sixth day. The right auricle continued to beat rhythmically for 5 minutes and irregularly for 15 minutes longer after the death of the rest of the heart. The electrocardiograms and other findings are reported and discussed. Once during the first day of life the heart stopped beating in consequence of being accidentally hit, but resumed its regular action after 2 minutes of direct massage.

Medizinische Klinik, Berlin

September 11, VI, No. 37, pp. 1363-1470

79 Present Status of the Trachoma Question. K. Starzardt.
80 Recognition of Mental Weakness, especially in Recruits. (Zur Erkennung des Schwachsinns durch Truppe und Arzt.) Weygert.
81 Two Epidemics of Influenza in Infants. (Influenza bei Säuglingen.) S. Weiss.
82 *The Tuberculin Focal Reaction. (Zur Tuberkulin-Herdreaktion.) G. Wolfsohn.
83 Wassermann Reaction among the Inmates of Asylums for Feeble-Minded. (Verbreitung der Syphilis in den Schwachsinnigenanstalten Württembergs auf Grund von Blutuntersuchungen mittels der Wassermannschen Methode.) R. Körner.
84 Indications for Interrupting Pregnancy on account of Tuberculosis. (Zur Unterbrechung der Schwangerschaft bei der Tuberkulose.) S. Kaminer.
85 Dispensing with Plate and Film in Skiagraphy. (Röntgenaufnahmen auf Bromsilberpapier.) W. Katz.
86 A Plea for Manual Massage. (Die unbewaffnete Hand des Arztes.) A. Bum.
87 *Responses to Question Blank Sent to Physicians Using Ehrlich's "606" in Syphilis. (Umfrage über die Wirkung des Ehrlichschen Arsenobenzols bei Syphilis.)
88 Tubercle Bacilli in Cutaneous Lesions. (Ueber Tuberkelbazillennachweis bei Hauterkrankungen.) W. Lier.

82. **The Tuberculin Focal Reaction.**—Wolfsohn regards as the greatest advance in tuberculin treatment the recent tendency to avoid any reaction, either local or general, but he thinks that much further progress may be realized if internists and surgeons will work together in cases of surgical tuberculosis under tuberculin treatment. In the surgical affections, under direct inspection the focal reaction to the tuberculin may afford most instructive information which will apply to the lungs. As a typical instance he reports the case of a woman of 34 with multiple tuberculous abscesses in the left breast and the scar of a tuberculous hip-joint affection which had healed 22 years before. The abscesses were evacuated and a course of tuberculin instituted under which the breast process rapidly healed, but the old hip-joint process flared up again. He regards the breaking out anew of the old coxitis as a specific focal reaction to the tuberculin in the strictest sense of the term. The tuberculin had been given in minutest doses for two months and was suspended at the first signs of redness in the old hip scar. The case shows that a clinically latent focus may respond to tuberculin and may progress even on suspension of the tuberculin. Such an occurrence in the lung could not be so readily controlled as with an accessible surgical lesion, as in this case. It is not impossible, he concludes, that the tuberculin treatment may fan an old latent apical process into a flame, and this focal reaction in the lung might terminate fatally. In his case the promptly favorable influence on the breast affection was remarkable, suggesting a local fluctuation in the defensive processes in favor of recent lesions.

87. **Symposium on "606" in Syphilis.**—The second of the 10 questions asked in the question blank sent out by the *Medizinische Klinik* is in regard to by-effects, and 7 of the 9 writers report occasional higher temperature and local pains as the only by-effects observed. But from Klingmüller's clinic at Kiel and by F. Pinkus of Berlin are reported 1 case of gangrene, 3 of local necrosis, 2 of abscesses, 3 of toxic erythema, 1 of detrusor paralysis, 1 of tenesmus and a case in which pre-existing diabetes became aggravated and still persists thus to date.

Münchener medizinische Wochenschrift

September 6, LVII, No. 36, pp. 1865-1920

89 *Experiences with Surgery of Blood-Vessels and Transplantation of Organs. E. Enderlen and W. Borst.
90 *Therapeutic Puncture of the Brain in Chronic Hydrocephalus. R. W. Finkelnburg.
91 Technic for Mixed General Anesthesia. (Ein Verfahren zur Stickoxydulsauerstoffnarkose.) M. Neu.
92 Roentgen-Ray Diagnosis of Miliary Pulmonary Tuberculosis. (Röntgendiagnose der miliaren Lungentuberkulose.) W. Achelis.
93 Action of Ehrlich's "606" on Psoriasis and Lichen. (Wirkung des Ehrlichschen Arsenobenzols auf Psoriasis und Lichen ruber planus.) K. Schwabe.
94 Coagulation Time of Blood in Pregnancy. (Ueber Blutgerinnungszeit in der Schwangerschaft.) P. Mathes.
95 General Amyloid Degeneration in Japan. Y. Tanaka.
96 *Technic for Artificially Induced Pneumothorax. (Zur Technik der Kompressionsbehandlung bei Lungentuberkulose.) J. Holmgren.
97 Industrial Accidents to the Hands. (Ueber Maschinenverletzungen der Hand.) E. Schümann.
98 *Peritonitis from Local Drug Irritation in Gonorrhea in a Male. H. Bodenstein.
99 Study of the Pulse during Physical Labor. (Plethysmographische Untersuchungen bei körperlicher Arbeit.) E. Weber.
100 *Diagnosis of Pulmonary Tuberculosis. (Kritische Beiträge zur Diagnose der Lungentuberkulose.) F. Köhler.

89. **Surgery of the Blood Vessels and Transplantation of Organs.**—The extensive work reported by Enderlin and Borst confirms the importance of biochemical individual conditions. These are sufficient to interfere with the success of homoplastic transplantation of organs. Only those of autoplastic origin promise complete success. He doubts whether it will ever be possible to overcome this difficulty of the biochemical individual peculiarities in transplanting organs.

90. **Therapeutic Puncture of the Brain.**—Finkelnburg reports a case of chronic hydrocephalus in a youth of 16, evidently the result of a trauma of the head 6 years before. The symptoms indicated progressive compression of the brain, some of them suggesting a tumor in the cerebellum, especially the pain in the back of the head, the stumbling gait, deafness, etc.; the pulse was only 56, the pupil reflex was sluggish, the eyes protruding, with extreme choked disc and nystagmus. The brain was punctured near the left motor centers to a depth of 5 cm., and about 20 c.c. of fluid was released under high pressure. The headache and vomiting subsided and the patient was able to walk without support and by the sixth day the choked disc was much less pronounced, while the hearing also had improved. Improvement continued to progress so rapidly that no further operation was attempted and the young man is now, 3 years after the operation, apparently well with a suspicion of nystagmus and slight exaggeration of the knee-jerk as the only traces of his former trouble. The necropsy in another case, the patient dying before puncture of the brain had been heard of, showed the feasibility of operative treatment in these cases. The only explanation of the rapid improvement after release of such a small amount of fluid is that the accumulated fluid by its compression had induced a kind of valve-like closure of the opening between the skull and the spinal canal.

96. **Technic for Artificially Inducing Pneumothorax.**—Holmgren states that it is possible to apply this method of treatment of unilateral pulmonary tuberculosis even in cases in which the adhesions between the sheets of pleura apparently contra-indicate it. This can be accomplished by injecting physiologic salt solution under pressure sufficient to detach the adhesions and spread apart the walls of the pleural sac. Without removing the needle it is then connected with the tank of gas which can then be injected without further difficulty to make the therapeutic pneumothorax.

98. **Peritonitis with Gonorrhea.**—Bodenstein explains the peritonitis in the case reported as due to chemical irritation from the silver nitrate solution injected so high as to reach the seminal vesicles and thence the peritoneum.

100. **Diagnosis of Pulmonary Tuberculosis.**—Köhler is in charge of a large sanatorium for pulmonary disease and his experience has shown that the tendency is to diagnose tuberculosis in many cases in which it does not exist. He warns that nervous-toxic processes, in combination with a special excitability of the heat center, play an important part in the reaction to the tuberculin test. They may induce a positive reaction even in the non-tuberculous. He obtained a positive reaction in 21.7 per cent. of numerous patients given a sup-

posed injection of tuberculin when either nothing was injected or merely sterilized water. The reaction to this sham tuberculin test could not be distinguished from the ordinary positive reaction. Lorenz has reported similar findings; he ascribes them to a neurasthenic or hysterical tendency. Elliesen has also reported recently positive reactions with chlorosis and once, in a case of Werlhof's disease, the intense tuberculin reaction and slight physical anomalies in the lungs indicated tuberculosis but not a trace of it could be detected at necropsy. Neumann and others have obtained a positive reaction in syphilis alone, others in actinomycosis, carcinoma and leprosy, and A. Fränkel obtained an unusually large proportion of positive reactions with patients with various diseases. However, when a positive reaction is obtained with minute doses, up to a maximum of 1 or 2 mg., the presumption is in favor of tuberculosis. In industrial accidents the shock to the whole nervous system may promote a positive reaction in the absence of tuberculosis. In one such case 4 test injections of 0.2 up to 1.5 mg. elicitated an intense positive response each time, but the lung findings were normal and the course of the case confirmed the absence of tuberculosis. In another case the trauma had lacerated the lung and aggravated an existing tuberculosis process, but repeated tuberculin tests up to 8 mg. were negative. A positive response to the tuberculin test merely indicates that the heat-forming apparatus is unusually excitable, and this is peculiarly marked in the tuberculous, but it does not follow that every one with excitability of this apparatus is necessarily tuberculous. He has also observed numerous cases in which the symptoms of the tuberculosis persisted unmodified although there was no apparent response to tuberculin. New foci may develop even in the course of tuberculin treatment and without disturbing the sensitiveness to the tuberculin. Even more important than the physical signs and the tuberculin reaction, is a tendency to loss of weight or increasing anemia. Köhler warns further that not every deviation from normal in the auscultation findings is necessarily of tuberculous origin. The changes with mouth breathing or dropping back of the tongue or as the patient swallows must not be ascribed to tuberculosis. Repeated examination on different days will disclose the inconstancy of the findings from these causes. Accumulation of fat in the corpulent may induce a pseudocrepitation over the apices. Even constant râles may be induced by a chronic streptococcus process as he cites by several examples, necropsy demonstrating the absence of all traces of tuberculosis, even in one case in which there had been repeated hemoptysis. It was explained finally as hemosiderosis from destruction of blood corpuscles from pernicious anemia. Everything in this case had pointed to pulmonary tuberculosis and the necropsy findings were a great surprise as there had been nothing to suggest the necessity for examination of the blood. With a tuberculous process in the lower lobe the patients may keep well nourished; he has had a case of this kind under observation for 6 years. This patient, now 21, could not stand tuberculin treatment as he reacted with high fever to the smallest doses, but his general health is still good, although he has 2 or 3 moderate hemorrhages every year. Köhler emphasizes that the physical findings merely indicate the physical condition of the lung but not the underlying cause of the changes observed, whether old or recent or whether due to the pneumococcus, streptococcus, or tubercle bacillus. The predominantly central tuberculous processes are more frequent, he declares, than is generally recognized. Enlargement of the glands in the neck is an important aid in diagnosis, as also the subjective disturbances, particularly a continuous sense of fatigue. One is tempted to ascribe such merely to a neurasthenic origin when in fact some concrete organic cause is responsible for it.

Therapeutische Monatshefte, Berlin

September, XXIV, No. 9, pp. 461-516

101 *Heart Disease. (Zur Beurteilung von Herzstörungen, und ihre Behandlung.) A. Plehn.

102 *The Lung Suction Mask and Its Therapeutic Application in Pulmonary Disease, Anemia, Asthma, Weak Heart Action and Insomnia. (Die Anwendung der Lungen-Saug-Maske.) E. Kuhn. Commenced in No. 8.

103 Serotherapy of Epidemic Meningitis. (Die Serumtherapie bei Genickstarre.) F. Goppert.

101. **Heart Disturbances.**—Plehn calls attention in particular to the disturbances ascribed to the heart when its outlines are normal in every respect and a dozen knee-bending exercises do not make the patient breathe much faster and, although the pulse may increase by 10 or 20 beats, yet there is no shortness of breath. These findings exclude actual organic disease, and for all forms of heart disease determination of the shape and size of the different parts of the organ is of primal importance; this alone, he declares, permits correct interpretation of the auscultation findings. It must be borne in mind, however, that the compensating dilatation and hypertrophy after an endocarditic process take some time to develop so that during or after acute articular rheumatism a systolic murmur and weak heart action require extreme caution and strict bed rest until normal heart action is restored. The biologic relations between the innervation and the muscles are particularly close in the heart, he continues, and the action of toxins, tobacco and alcohol, of the toxins generated in exophthalmic goiter, and of emotions is the main factor in heart disturbances without enlargement of the organ. The reflex heart neuroses proceed from the gastro-intestinal or genital sphere, either directly or from emotional depression. The connection between the heart and the stomach is closer than is generally recognized, he states. Acute pericarditis, for example, is usually accompanied by violent gastric symptoms and dilatation of the stomach by serious symptoms on the part of the heart. A mild pericarditis is a frequent occurrence and may pass unsuspected unless the physician examines the heart when he will find the dulness extending a little farther than usual and sharply defined while careful percussion will reveal that the heart-liver angle can no longer be detected. With an exclusively nervous heart disturbance, angioneurotic edema of the ankles is common; mechanical disturbances in the peripheral circulation occur comparatively late and only after such have developed in the liver, kidneys and lungs. If there are no signs of this or of organic changes in the heart, moderate edema need not be regarded with pessimism. He treats acute articular rheumatism so perseveringly with the salicylates that endocarditis rarely develops among his patients, and he suggests prompt salicylic medication to be resumed again with every infectious sore throat in persons who at any time have displayed a tendency to endocarditis during acute rheumatism or other infection. Energetic salicylic medication may ward off endocarditis and valvular defects even after pericarditis or myocarditis is already installed. He adds that any one who has ever had acute rheumatism should guard carefully against getting chilled or wet through and against over-exertion. An extra-hygienic life should be followed by persons with a family tendency to arteriosclerosis, apoplexy, obesity, diabetes or gout, and the obese should bring their weight down before the heart has suffered severely. At the same time he warns that too severe restrictions are liable to bring on hypochondria which may react unfavorably on the organic trouble.

102. **Mask to Induce Passive Hyperemia in the Lungs.**—Over four years have now elapsed since Kuhn introduced his "lung suction mask" to induce passive congestion in the lungs by obstructing respiration. He here reviews his own and others' experiences, all confirming the absolute harmlessness of the measure and its efficient action in impeding the inspiration, which is nasal, while expiration proceeds unobstructed both by mouth and nose. As Tileston explained, in THE JOURNAL, April 11, 1908, page 1182:

> The effect of impeded inspiration is to produce negative pressure in the thorax, lasting almost throughout inspiration; the inspiratory muscles are brought into strong contraction, inspiration is prolonged, and the rate of respiration is lowered. The most important effect, however, is the marked aspiration of blood from the right side of the heart into the lungs, due to the prolonged negative pressure. The lungs are, therefore, supplied with an increased amount of blood. Moreover, since expiration is not obstructed, it will be short, and the blood will not have time to escape entirely to the left side of the heart. Thus, after wearing the mask for a while, a considerable degree of congestion is obtained, as has been proved by animal experimentation. This hyperemia differs, of course, from the passive congestion of heart disease, in that there is no obstruction to the pulmonary circulation. The increased amount of blood in the lungs is of the greatest benefit, for it is conceded that it is the relatively poor supply of blood or lymph to the apices which predisposes those parts to tuberculosis.

Not only is the blood aspirated into the lungs but the circulation of the lymph also is materially promoted; other methods of inducing passive hyperemia in vogue check the lymph current. The promoted circulation of lymph and blood induces rapid absorption of effusions while toning up the tissues in every way. Another advantage Kuhn claims for the method is that as the number of inspirations becomes reduced, the lungs are correspondingly rested; the respiration is exclusively costal but the diaphragm is sucked upward by the prolonged negative pressure above and thus the space for the lungs is even less than with ordinary unobstructed breathing, as he shows by a number of illustrations and skiagraphs. The ribs expand mightily, Kuhn states, and this in time has naturally a most beneficial influence on tuberculous lesions in the lungs. At the same time the blood-producing apparatus feels the effect of the lower oxygen tension and responds as it does to the air of high altitudes, the number of red cells in the peripheral circulation becoming permanently increased. He insists that no other measure has yet been discovered that proves so effectual in promoting blood-production as this simple partial obstruction of the respiration. On account of the negative pressure in the chest, the blood pours more abundantly through the heart and the myocardium becomes better nourished and works more effectually, as can be traced by the auscultation and other findings. Zabel has reported great benefit in two cases of severe cardiac defects and others in pericarditis, bronchial asthma, emphysema, pleurisy, bronchitis, anemia and hemoptysis. Cough and dyspnea are allayed, râles, expectoration and bacilli subside in the tuberculous, the complexion and appetite improve, and a gain in weight naturally follows. Except for a slight feeling of oppression in the head for the first day or so, there are no by-effects, Kuhn says, unless the muscles of the chest may ache a little at first from the unwonted exercise. An interesting effect of the impeded respiration is the drowsiness that ensues. Dogs drop promptly to sleep even when suspended in uncomfortable positions, and patients wearing Kuhn's mask lie drowsy most of the time, so that it is proving excellent in combating insomnia. When the dogs with the mask are roused from sleep they are lively at once, which demonstrates that the drowsiness can not be due to carbon-dioxid intoxication; it is evidently the result of the aspiration of blood away from the brain plus the diminished oxygen tension in the respiration center. The respiration is sometimes reduced to 7 or even 6 inspirations a minute in animals under the influence of the mask. The mask is a celluloid cap tied over the nose and mouth, with an adjustable arrangement shutting off more or less of the intake of air to the nose while valves permit its free outward escape. The application of this method of inducing passive hyperemia does not conflict with any other measures that may be applied, but for permanent benefit it is evident that it must be used for many months to modify the conditions in the chest permanently. The only contra-indication, he says, is a very weak heart, and even with this the mask is useful, but it should be applied only for brief periods at a time. In conclusion we quote again from Tileston who states that he found an extraordinarily low percentage of pulmonary tuberculosis in 128 cases of mitral stenosis and in no case was there any evidence of active tuberculosis. This relative immunity is due, he thinks, to the passive hyperemia of the lungs consequent on the mitral lesion.

Wiener klinische Wochenschrift, Vienna

September 8, XXIII, No. 36, pp. 1279-1306

104 Ehrlich's "606" and Enesol in Treatment of Malaria. (Behandlung der Malariainfektion mit Enesol "Clin" und Ehrlichs Dioxydiaminoarsenobenzol.) R. Fleckseder.
105 Case of Paratyphoid A Infection. B. Purjess.
106 *Sensitization to Light as Factor in Pellagra. W. Hausmann.
107 *Experiences with Operations on the Neck. (Die Krankheiten des Halses.) K. Ewald. Commenced in No. 35.

106. Etiology of Pellagra.—Hausmann has been conducting extensive research on the sensitizing action of hematoporphyrin, a product of the decomposition of hemoglobin, seen in the urine after destruction of red-blood corpuscles. The phenomena observed seem to prove that it has a sensitizing action so that exposure to the light afterward induces various pathologic changes. He is convinced that this sensitization plays an important part in the production of pellagra, and quotes certain other writers whose recent research has led to the same conclusions.

107. Operations on the Neck.—Ewald reviews the experiences in this line at the Sophia Hospital at Vienna since 1902. The list includes 96 operations on the thyroid, for exophthalmic goiter in 7 and carcinoma in 3. Only 23 of these patients were males, pregnancy being probably responsible for enlargement of the goiter in many instances. In some cases the enlargement occurred suddenly, threatening suffocation, and being probably the result of hemorrhages in the gland. It seems evident that the thyroid may become enlarged under nervous influences alone. In 65 cases he operated under local anesthesia, but this has so many disadvantages that now he always gives a sedative beforehand. There was some fever during healing in all but 4 cases, but no tetany in any instance and severe postoperative pneumonia appeared in only 2 cases; the sputum was hemorrhagic in these cases, suggesting an embolic focus. Three of the patients succumbed soon after the operation on the thyroid; one was a young man, a semi-imbecile, with persisting thymus and enlargement of the lymph follicles, especially at the base of the tongue. This hypoplasia of the organism seems to reduce the resisting powers. The general anesthesia was not responsible for the fatality in this case as was shown by the second fatality in which the operation had been done under cocain local anesthesia. This patient was a woman of 62, with goiter for 15 years, rapidly increasing in size towards the last, with a suspicion of malignancy. She seemed to be doing well during the night after the operation and the next morning breathing was superficial but not labored and there was no trace of dyspnea. An hour later she died suddenly without stridor, and necropsy disclosed unsuspected edema of the glottis. Only laryngoscopy would have revealed the trouble and nothing was observed to suggest the necessity for this. In the third case, a man of 50 required both cocain and chloroform and roused from the anesthesia with left hemiplegia; he soon became unconscious and died the third day; necropsy revealed 2 foci of acute leptomeningitis but nothing to connect it or the fatality with the operation. Ewald discusses the ultimate cosmetic outcome of the various operations on the neck, 72 of the patients being examined several years later. The goiter recurred in 20 cases, and in 7 a second operation was necessary. The ultimate outcome in exophthalmic goiter was disappointing in all but one case. In 10 other cases the operation was required for acute inflammation in the thyroid, without preceding goiter in 5 cases. In the 6 cases of torticollis good results were obtained although no attempt at systematic after-treatment was made, the patients being merely instructed to exercise the neck muscles after the contracting fibers had been severed. Only a few patients with enlarged tuberculous glands were operated on, as he does not approve of opening up a lymphoma unless it has persisted for years unmodified, isolated and never softening. Under other conditions an operation is liable to be followed by recurrence, while the opening up of the lesion exposes it to secondary infection. So long as the glands are growing in size, general hygienic measures alone are applied, the patients tranquilized, and when the glands enter a quiescent stage, they are generally so small that their removal is no longer desired. If the gland softens and the inflammation compels interference, he curettes out the cheesy masses, avoiding sound tissue, believing that as the disease is not local but general, it is impossible to eradicate it by removal of even all the infected glands.

Zentralblatt für Chirurgie, Leipsic

September 10, XXXVII, No. 37, pp. 1217-1248

108 *Subcutaneous and Intravenous Nourishing Infusion of Sugar. (Ernährung mit Traubenzucker nach Kausch.) J. Berendes.

108. Alimentary Infusion of Sugar Solution.—Berendes reports the experiences in 40 cases in which the patients were nourished by subcutaneous or intravenous infusion of a 5 or 7.5 per cent. solution of grape sugar in 0.9 per cent. salt solution. This represents from 200 to 300 calories to the

producing sudden excruciating precordial pain. For the fifty hours that the patient lived the heart tones were barely perceptible, and the peripheral pressure extremely low. But in cases in which there is no such acute and extensive myomalacia cordis as was present in this instance, the pressure may be low for a long time and the patient busy about his work, though interrupted at times by the attacks.

Most physicians regard the existence of an aortic valve lesion of a sclerotic character as tending to strengthen their belief in the organic origin of the painful attacks, that is, such a finding points toward a true angina, and away from a so-called pseudo-angina. The same is true if the arch of the aorta is dilated uniformly, or in circumscribed aneurismal manner. The sclerotic or atheromatous lesion of the aorta or the valves leads one to suspect a similar trouble in the coronaries, or perhaps only at their mouths. And those who, like Allbutt, see in the aortic ring the seat of anginal pains, naturally interpret evidence of anatomic change in this locality as proof of the organic origin of the attack. Much depends on one's conception of the cause and nature of this disease. Some, however, hold so rigidly to the theory of coronary origin that, if aortic regurgitation or aortic aneurism be made out, or if there be strong reason to suspect aortitis, they will not call the seizures anginal, though the pain and other phenomena may be classic in every respect. They speak of such seizures as merely "the pain due to aneurism, aortic regurgitation," etc., but not the pain of angina pectoris; that is, coronary disease. This view, while held by only a few, is too narrow.

NUMBER AND DURATION OF ATTACKS

Another fallacy is connected with the number of attacks. Not a few physicians have been heard to express the opinion in concrete cases that, because the attacks were frequently repeated, they could not be anginal for, they assert, an individual never has more than a few; he succumbs if there are numerous recurrences. This is utterly wrong. Repeated attacks of severe type may occur during periods varying from many days to many months. And it is no uncommon experience to meet patients whose milder attacks—the angina minor of some—are repeated several times in a single day. Neusser mentions a woman with twenty attacks a day. In one patient seen many times I witnessed over a period of three years the sufferings of this disease, there being at times as many as six and eight paroxysms in a day.

The attack is usually brief, being over in a few seconds or a few minutes. But in other instances it is more prolonged. After the acme of pain has been reached, there is a moderation, but still a residual pain, a soreness of skin in the precordia, and a numbness or pain extending down the arms, especially the left, to the elbow or fingers. The patients may suffer, therefore, for many minutes, or the pain may last for hours. In the patient already referred to, the one who had coronary thrombosis, the agonizing substernal pain lasted three hours, though death did not follow until fifty hours. Morison describes a case of coronary thrombosis with anginal pain, lasting twenty-three hours. This patient had previously suffered from milder attacks of angina. Opinions might differ as to the propriety of speaking of this more chronic state as angina, though it has the characteristics of the acute paroxysm, only less in degree, and longer drawn out as to time.

Where the status anginosus exists, one attack is rapidly followed by another, even on the slightest provocation or after no appreciable cause; some pain and soreness persist between the attacks, so that the patient is in a state of continuous pain and suffering, with frequently recurring exacerbations.

EXCITING CAUSE

The exciting cause of the attack is usually exertion, especially rapid walking. Some strange anomalies are at times seen. Thus a man may have an attack that is brought on by the mere effort of walking about the room, while he dresses, or simply by stooping to lace his shoes. After his breakfast he may be obliged to stop two or three times on his way to take his train; yet for the rest of the day he is free, even though he may walk a considerable distance and eat rather freely at luncheon and dinner. One of my patients, in a suburb, could ride a bicycle to the station with fewer seizures than if he walked, though the streets were level and when afoot he never hurried. Another patient, a woman, has for two or three years been unable to walk two blocks without pain, necessitating her stopping to rest or to take nitroglycerin. She can remain for days together free from pain if she sits or lies still. Charles Sumner had attacks that at times seemed to be brought on by some sudden move, as by turning in his revolving library chair. Yet at other times, as when speaking in the Senate, he could be on his feet for hours, with all the mental excitement, bodily activity and gesticulation of earnest debate, and still be free from pain. It is well known that a fit of anger, a breath of cold air, an overloaded stomach, may precipitate a seizure.

These irregularities are to be remembered, and they are here referred to, because the opinion is at times expressed that attacks come on only after exertion; and, on the other hand, that, if an individual with supposed angina is able to walk briskly without an attack, it is proof against the existence of angina. While exertion and the other causes mentioned are the common provocative ones, these causes may produce an attack at one time and not at another, and often no cause can be clearly assigned for the outbreak any more than for some epileptic seizures.

INFREQUENCY IN WOMEN

All agree that true angina is comparatively rare in women, some statistics showing less than 5 per cent. Heberden saw three women in one hundred patients with angina. Undue importance is sometimes attached to the infrequency in women, and one may thus be influenced away from a correct diagnosis. The error is easily understood, too, when in an individual case there are evidences of a strong neurotic taint. The undue excitement, the tendency to introspection and to exaggeration of symptoms, the desire for attention and sympathy, perhaps even the pronounced hysterical manifestations, may easily mislead one to the diagnosis of a functional, neurotic or so-called false angina. No inviolable rule can be given for the sure differentiation, but a study of the cardiovascular condition, the age, the exciting cause, the radiation of pain, the behavior and attitude during rather than after the attack will all be of help. It is certainly a cause for regret and chagrin to diagnose pseudo-angina and in a week or two have the woman die in an attack. In the case of a woman seen by many different physicians, all agreed as to the existence of a cardiac valvular lesion, and all agreed as to the existence of a marked neurotic, even hysterical, element, aggravated by a free habitual use of morphin. There was, however, a wide divergence of opinion as to the organic

basis of the anginal attacks, some regarding them as wholly of the false type. A rest-cure, with breaking off of the morphin habit and marked improvement in every respect, lent color to the theory of pseudo-angina, but the woman died suddenly some two or three years later, as in angina. One has to keep clearly in mind what has been often said, but what is easily forgotten, that the cardiopath is often a neuropath. The hysterical woman may have underlying the nervous manifestations a serious pain-causing disease.

PAIN, UNCONSCIOUSNESS, IMMOBILITY, ETC.

Certain facts concerning the pain itself are worth repeating, for it is easy to have a stereotyped picture in mind, while in reality there are not a few variations.

I have never seen a case that I recognized as angina sine dolore, but since its description by Gairdner, it has been a recognized form, and one cannot question its existence. Not long ago I heard Dr. J. M. Patton describe his experience in being called to the home of a colleague whom he found lying on the couch. In answer to the question as to what was the matter, the reply of the patient was that he did not know, he had no pain, but an indescribable sensation in the cardiac region, and an appalling sense of the presence of death, and "I'm mighty glad to see you," he said. In a minute more he suddenly expired. There was no feeble, rapid, irregular pulse; no dyspnea; no cyanosis; no pain—apparently angina save the pain.

It is surely wrong to state dogmatically that pain, in order to be anginal, must be severe, excruciating, unbearable. There are milder degrees. What is called angina minor must be viewed as in its essence of the same nature as the angina major. In one sense its recognition may be of greater importance than that of the major type, for it may lead to appropriate advice that may prolong life in cases in which were the disease unrecognized, a faulty mode of life might lead to early death.

The most typical radiation of pain is to the left side of the neck and down the left arm. But one must be prepared for odd radiation. The radiation is often down the right arm. In one of Morison's patients the right arm radiation was associated with sclerosis of the right coronary only. The pain may run down both arms. It often goes down the ulnar side. It may stop at the elbow, the wrist, or run to the little finger. Pain may start in the fingers, run up the arm, and finally centralize at the heart, seemingly a centripetal rather than centrifugal course. Pain, numbness and tingling may be complained of in the intervals between the attacks, and may be regarded as rheumatic and articular in origin. Pain to the jaw, to the ear, to the back may be described. And particularly confusing are the cases in which such odd radiations as to the epigastric, lumbar, renal and testicular region are seen. Tenderness of the skin, as described by Head, may at times be made out. One of my patients, a woman, often has most profuse salivation with the substernal pain, that radiates to the left shoulder and arm. MacKenzie mentions this same salivation in his experience.

Unconsciousness, though unusual, is yet seen at times. On two occasions I have known a sufferer from angina to become unconscious, once at the climax of a paroxysm. Osler and others mention the same occurrence.

Immobility is a characteristic feature. The patient is afraid to move for fear the pain will be aggravated. He sits or stands motionless, at times almost statue-like; he will not lie down. Yet there are exceptions to these rules. Charles Sumner often walked about his library during an attack. An old colored man whom I recently had under my care in the County Hospital usually lay down, on the sidewalk or porch, or wherever he was taken, until the attack was over. His sudden death, two weeks after describing to me and to the class in clinic the typical manifestations of the disease, and the finding of sclerosed aorta, aortic valves and coronaries, confirmed the diagnosis of angina. This is, I think, the only patient I have seen who by choice would lie prone during an anginal seizure, though I have several times seen patients in a half-sitting posture, or have had such position described to me as the one assumed. A woman of 45, who had definite loud basic murmur, apparently due to roughened aorta and aortic valves, would, during the pain of angina, get on her hands and knees in bed. She was neurotic and admitted that there was a hysterical element in her case, but insisted that the pain was real and that this position gave her the greatest relief.

Once or twice I have had the diagnosis of angina questioned because of the prominence of eructation or vomiting. Flatulence or vomiting may be marked. At times the attack ceases with the belching of gas or the raising of the contents of the stomach. That a stomach distended with gas or food may cause epigastric or precordial distress is a well-known fact, but it should also be remembered that true angina not infrequently follows a hearty meal, or is accompanied by striking gastric symptoms.

PROGNOSIS

A word about prognosis. There is in some quarters the opinion that the disease is not only inevitably fatal, but that death is sure to follow in a short time, or after two or three attacks. There is surely good reason for viewing this condition as one of extreme gravity. Death, and often sudden death, is the common result. But it is also worth noting that the fatal termination may be deferred for years and, exceptionally, complete recovery seems to ensue. If one includes under the head of angina pectoris the toxic, as for example, tobacco anginas, and the neuroses with precordial angina-like pains—the so-called pseudo-anginas—the mortality percentage, while high, would not be so startlingly large. But even excluding the neurotic forms and limiting the statement to the true cardiovascular types, the mortality is not 100 per cent., as some think; and even in the fatal cases death may be postponed for many years. In a paper recently presented to the Chicago Medical Society, Dr. Forchheimer of Cincinnati cited one of his cases, in which the first attack had been seventeen years before death. Dr. Billings had seen a patient live fifteen years after the first paroxysm. A physician whom I cared for had his first severe and nearly fatal angina seven years before his fatal attack. Morison describes a case in which the pains recurred at intervals for seven years. Stokes had a case in which for ten years the patient suffered from attacks of excruciating severity. John Hunter had attacks for twenty years.

The recognition of the malady, the regulation of the mode of life to that most suited to the cardiovascular condition, involving, as it often does, change in diet and habits of work, the proper use of remedial drugs; in a word, appropriate treatment may materially alter the prognosis. The condition of the heart and vessels as to aneurism, valvular disease, general sclerosis, myocarditis and fatty changes, must determine to a marked degree the length of life. And so, too, does the condition of the kidneys.

NITRITES AND DIGITALIS

I wish to refer briefly to certain fallacies concerning the use of nitrites and digitalis.

The nitrites have, especially of late, been held by some in less repute than formerly, because they fail completely in some instances to relieve or ward off the attacks. Others seem so convinced of their efficacy that, when in a case of supposed angina the nitrites fail to relieve the suffering, and to relieve it promptly, they conclude that they are dealing with something different from true angina. Now, the truth seems to be that nitrites in some cases give most prompt, marvelously prompt relief. The testimony of many physicians is available on this point. It is hard to understand, then, how some good men—Romberg, for example—regard this remedy as either of no benefit or of very insignificant value, at least during a seizure. Unless convinced by repeated trials as to its uselessness in the attacks, no patient should fail to keep in his pocket either the pearls of nitrite of amyl or the pill or tablet of nitroglycerin, gr. 1/100 to 1/50. Some attacks are surely cut short by the use of these remedies, and often the patient has a slight warning of the onset, and the timely use of the drug may prevent a paroxysm.

No matter how strong the prejudice against the use of digitalis in cardiac hypertrophy and general arteriosclerosis may be; no matter what may have been said against its employment in weakened myocardial states, there can be no question that in some cases of angina—not easily described, either—this drug does more good than all the iodids or nitrites.

SUMMARY

These views may be summarized by making the statements as a series of negations:

1. With "true," organic cardiovascular angina pectoris there cannot always be made out peripheral arteriosclerosis, cardiac hypertrophy and high blood-pressure.

2. The finding of aneurism or lesion of the aortic valves does not exclude angina, but rather argues in its favor.

3. The attacks are not always few in number and brief in duration; they do not occur solely after exertion.

4. While the prognosis is grave, life is not necessarily limited to a few months.

5. The disease is by no means to be excluded because the symptoms are found in a woman, even in a nervous or hysterical woman.

6. The pain is not necessarily severe; it may be mild or even lacking; its radiation is variable.

7. The statement that the patient is always conscious, that he is always immobile and erect must be modified so as to read "usually" instead of "always."

8. Eructations or vomiting during an attack do not argue conclusively against the cardiovascular origin of the angina.

9. It is not correct to look on the nitrites as of no benefit in relieving symptoms; nor, on the contrary, is one justified in concluding that a case unrelieved by nitrites is not angina.

10. Digitalis is not necessarily contra-indicated; it is often of very great value.

Closer observation of the atypical as well as the typical cases, with collocation of the results with those of anatomic and experimental studies will lead to unifying knowledge concerning the pathogenesis of this disease, to greater precision in its recognition, and to more appropriate treatment.

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ABSTRACT OF DISCUSSION

DR. JOSEPH L. MILLER, Chicago: If we followed the statements made in text-books regarding angina pectoris, the diagnosis of this disease would frequently not be made. A statement often made is that patients suffering from angina pectoris always remain quiet, whereas, many patients with typical attacks of this disease will move about. I believe that the term "pseudo-angina" should be entirely abandoned. Patients with symptoms resembling angina pectoris, in whom we can exclude an ordinary neuritis, should be considered as suffering from true angina. I do not believe that the value of digitalis in angina pectoris is fully appreciated; I think that there are many patients who receive permanent benefit when taking this drug, the attacks recurring less frequently. It has been shown experimentally that a much more extended ligation of the coronary artery may be made without serious consequences when the animal is under the influence of digitalis or strophanthus, and I think that the same holds true in human beings. There may be obstruction of a coronary artery with less serious consequences if the heart is under the influence of digitalis.

DR. GEORGE W. MCCASKEY, Fort Wayne, Ind.: I had under observation last year a patient who had anginous attacks occurring sometimes during exercise, but the majority occurred during the night. The patient awakened in the night with this precordial pain and a sense of approaching death, etc. These attacks were as typical during the night as during the day. This patient referred to finally died and came to autopsy. The heart was exhibited to the Fort Wayne Medical Society, and showed both coronary arteries extensively involved. There is a group of cases which has interested and troubled me very much, in which this precordial pain is more or less persistent, with occasional severe exacerbations. Whether such cases should be placed in the group of angina pectoris is a question that must be answered according to the definition of angina pectoris. But there are some cases, indistinguishable by their symptoms, in which there is serious organic disease and in which the heart is able to adjust itself to the new conditions. If the nutrition be improved, some of these patients will make a relative recovery.

I recall the case of a patient, aged 60, who came to me about four years ago, suffering from severe typical attacks of angina pectoris. His family physician, on several occasions when called in to attend him, thought he would die. I placed him on the usual treatment. He was given the nitrites, small doses of digitalis, and iodids. This patient made a complete symptomatic recovery. I saw him within the last six months and he apparently is in good health.

Another patient that I now have under observation has more or less persistent pain. This man is very intelligent and cooperates with me in observation of his case. He says that he never was free from a sense of constriction, but what annoys him most is this pain, which at times is almost continuous; at other times he has a sense of pressure. If he exercises he brings on an attack. He has no paroxysms during the night. Still another case of an entirely different type was in a boy of 11, who, about 3 years ago, had what apparently were typical attacks of angina pectoris. The precordial pain lasted a few minutes and the attacks occurred mostly during the night, though they also occurred at times after exercise. One would not expect any trouble with the coronary arteries in a boy of this age; he made a complete recovery and is well to-day.

I think that the majority of these cases occur about middle life or later, and are due to changes in the coronary arteries. But what causes the pain in angina pectoris? I think there must be some interference with the circulation in the heart muscle or disturbance of the neuromuscular mechanism of the heart. This is certainly far from a satisfactory explanation, but is the best we have at present.

DR. GUSTAV BAAR, Portland, Ore.: Some years ago, Billroth said that in cases of angina pectoris he gave one-half grain of digitalis leaves every day and that the patients could then keep at work. Since then, I have employed this agent in this form and dosage, and with very good results. At the same time I must caution against the promiscuous

use of digitalis in heart disease. I have seen a number of "bronchial asthma" patients in collapse—cold extremities, imperceptible pulse, etc. In these cases I have injected 1 mg. of strophanthin, intravenously. A young woman, after injection of this amount of strophanthin, within three minutes displayed bounding and rapid pulse and is alive to-day. Through my experience in this case I was much encouraged in the use of strophanthin. Some time later, I was called to see a patient with "angina pectoris," who had been under the digitalis treatment for three years. I found this patient in collapse and injected 1 mg. of strophanthin; after injecting the drug I left, but was called back at the street corner: the woman was dead. Undoubtedly, the death was due not to the angina pectoris, but to the strophanthin. Since then, I have given up the use of strophanthin in any case of arteriosclerosis, a condition which is usually associated with angina pectoris.

DR. SCOTT P. CHILD, Kansas City, Mo.: I should like to report a case of angina pectoris in support of Dr. Herrick's contention that many cases are atypical. The patient was an active Episcopal bishop of western Missouri, aged 70, height 6 feet 2 inches, weight 180 pounds. While attending to the duties of his diocese, and following an evening meal, he ran upstairs and was immediately taken with what he termed the most severe pain he ever suffered. The pain, beginning at the base of the heart, back of the sternum, ran up into the neck and jaws of both sides and down both arms to the finger tips. The pain lasted an hour and a half, being relieved only by a hypodermic injection of morphin. During the attack of pain the patient suffered from intense cold, which was followed by profuse perspiration. Two days following the attack, the pulse was quite regular, the rate varying from 120 to 130; the blood-pressure in the right arm was 140 mm. Hg, that of the left 126 mm. Hg. This patient has been under my observation for two years (no previous attack suffered), with a well-established myocardial insufficiency, the heart being enlarged well beyond the nipple line and down to the sixth interspace. So far, no valvular signs have developed. This patient for several years has had evidence of interstitial nephritis, with a constant albuminuria, hyaline, and frequently granular casts. Two days following this attack of angina, the urine revealed 0.5 per cent. of albumin and numerous hyaline and granular casts. At the end of a week, with rest in bed and a regulated diet, the pulse was down to 92 and regular, the blood-pressure was low, and the urinary findings very much improved.

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: It is unfortunate that so many physicians are looking for such cases of angina pectoris; they look for cases of such severity that the patients are made perfectly quiescent, with fixation of the body, cyanosis, and so forth. They do not seem to realize that there may be cases of angina pectoris, with intermittent attacks of mild character, which have been threatening the patients for years. I learned long ago that the pulse in angina pectoris was unreliable; I have found a low pulse and a rapid pulse in bad cases, as well as in mild cases of this disease. If these cases are properly conducted and properly managed between the attacks the attacks will become less severe. Like Dr. McCaskey, I like to give the iodids with the digitalis.

I doubt very much the diagnosis of angina pectoris made in the case of the boy of 11 years; I have yet to see a true case of angina pectoris occurring in a patient so young. We are likely to get an increase in the blood-pressure, with evidences of an accentuated second sound of the heart, but no evidence of atheroma of the coronary arteries. Many of these cases may be explained and will be found not to be due to angina pectoris. The nitrites act happily in some cases, but when most needed they most often fail to give relief. It is especially in the bad cases that the nitrites seem to fail us.

DR. ALLEN A. JONES, Buffalo: We cannot always judge of the condition of the coronary circulation in the heart from the condition of the peripheral circulation as we see and feel it. I have now under observation a patient with typical attacks of angina pectoris. He has suffered any number of attacks; he is an individual in middle life, and pulse, blood-pressure, and heart are practically normal. The pain may be present in an unusual situation, and not in the classical situation, precordial and running to the left shoulder and left arm, or to the wrist and thumb. In a paper read at a session of this Association in Atlantic City some years ago, I called attention, in discussing "Abdominal Symptoms of Thoracic Disease," to the fact that we might encounter epigastric pain as well as cardiac. The pain may be typically epigastric, and may be called gastralgia; in fact it often is. Between the attacks of angina pectoris it is not an uncommon experience to find individuals complain bitterly of gastric symptoms, and more especially of a collection of gas in the stomach, a "pneumaptosis," the pressure of which on the diaphragm frequently leads to an attack. I think that one should exercise great caution in his choice of cases; in a patient with high blood-pressure, with cardiac hypertrophy and with a competent heart, digitalis is not to be used except under extreme watchfulness. On the other hand, given a case of angina pectoris with opposite conditions, in a frail and spare individual with low blood-pressure, and with attacks often coming on after exercising, then the administration of small doses of digitalis over a long period frequently does good.

DR. JAMES B. HERRICK, Chicago: The question of treatment I purposely omitted from my paper, except the few words concerning digitalis and the nitrites. I agree, however, with what has been said in regard to the use of the iodids; they certainly are of great benefit.

THE VISCERAL ANESTHESIAS OF TABES DORSALIS IN RELATION TO THE DIAGNOSIS OF ACUTE INFLAMMATORY CONDITIONS IN THE ABDOMEN

WITH AN ILLUSTRATIVE CASE *

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The value of pain as an element of safety in the body economy and the disastrous effects of the absence of the normal sensibility of a part are illustrated in the destructive ophthalmia which so frequently follows a lesion of the trigeminal nerve, and in the familiar "Charcot joint" of tabes. Although trophic disturbances probably have some part in the development of both of these conditions the absence of the normal sensibility seems to play an important rôle in determining the progressive and destructive character of both processes. Slight injuries pass unfelt and unheeded. In the case of the tabetic arthropathy the absence of pain results in the absence of all reflex protective contraction of the muscles controlling the joint movements; the continued free use of the limb increases constantly the existing damage and there ensues a gradual, painless disintegration and destruction of the joint. A recent experience has brought home to me the fact that sensory disturbances in tabes may, indirectly, lead to grave damage to the body in ways other than by the development of "Charcot joints" or perforating ulcers of the foot. The following case illustrates this fact:

FATAL PERFORATIVE APPENDICITIS IN A TABETIC WITH COMPLETE ABSENCE OF PAIN, TENDERNESS AND MUSCULAR RIGIDITY

Patient.—A brakeman, aged 42, was admitted to the medical service of the New York Hospital on August 14, 1909, with an acute febrile attack of three days' standing. His history as given at that time was as follows: Family history is un-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St Louis, June, 1910.

important. The patient had measles in childhood; malarial fever twenty years ago; chancre seventeen years ago; treatment for a few weeks only; indefinite secondary symptoms; gonorrhea twice; last time four years ago. He was a heavy drinker up to eight years ago; since then has used no alcohol. For the past year has had some difficulty in controlling his bladder and rectum and has had frequent sharp, darting pains in the legs. About four weeks ago he began to have a "weak, tired feeling" in the legs; could not feel distinctly with his feet and would stumble when attempting to walk in the dark. Three days ago he began to be very feverish. Since then he has had several shaking chills and some profuse sweats. There has been no regularity in the appearance of the chills; no pain; no other symptoms except prostration and malaise.

Physical Examination.—Male subject, large frame, poorly nourished. Skin and mucous membranes of good color. Admission temperature 104.6 F., respiration 24, pulse 108.

Eyes: Left pupil smaller than right. No reaction to light in either pupil. Prompt reaction in accommodation. Tongue moist and clean. Superficial lymph-nodes not enlarged.

Pulses: Equal, regular, rapid, of good size and force, moderate tension. Arterial walls slightly thickened.

Heart: Apical impulse diffuse. Seen and felt in fourth and fifth intercostal space 13 to 14 cm. to left of mid-line. Right border of relative dulness not satisfactorily determined; left border 13 cm. to left of mid-line. Heart sounds clear except at apex, where a short, soft systolic murmur is heard.

Lungs: Percussion gives everywhere a somewhat short, "wooden" resonance. Lungs voluminous. Respiratory murmur is everywhere vesicular. No adventitious sounds.

Abdomen: Flat, soft, thin-walled. No rose spots. Liver dulness extends from sixth intercostal space to free border of ribs. Edge of spleen can be indistinctly felt just above the costal border. In the right iliac fossa a soft, elastic, elongated and freely movable mass (cecum?) can be distinctly felt through the soft, relaxed, abdominal wall. In the left iliac fossa a similar, somewhat smaller object can be felt. Neither mass is tender on palpation. No tender points can be elicited anywhere in the abdomen, nor is there anywhere muscular rigidity.

Genitals: Small scar on glans.

Extremities: A number of pigmented, depressed scars over both shins. Knee-jerks and Achilles jerks cannot be elicited. Plantar reflex absent. Marked diminution in tactile and pain sensibility over feet and legs.

Course of Disease.—On August 15 the patient vomited several times. The temperature continued high and irregular. The mind was clear. The patient complained only of the fever and general malaise; required catheterization. Urine contained a trace of albumin and a good many hyaline and granular casts but no pus. Leukocytes were 9,700; polymorphonuclear cells 83 per cent.; lymphocytes 17 per cent.; hemoglobin 85 per cent. The Widal test was negative. There were no malarial plasmodia. The abdomen was soft, flat and entirely free from tenderness.

During the next six days the patient's condition grew slowly but steadily worse. The temperature fluctuated between 100 and 104 F.; the respirations between 24 and 32, and the pulse gradually grew more rapid and feeble. The patient continued to vomit frequently, the vomited matter consisting usually of bile-stained fluid. The bowels were readily moved by laxatives or enemas. The patient complained of no pain whatever, and frequent examinations of his lungs, heart and abdomen failed to supply any clue to the diagnosis. The Widal test was repeatedly negative. Two examinations of the scanty sputum failed to reveal tubercle bacilli. The urine gave no evidence of a pyelitis or cystitis. The soft elastic mass in the right iliac fossa seemed rather to diminish in size, could be readily displaced under the finger and was never tender to pressure or manipulation. It seemed to be only the normal cecum felt through an unusually thin and relaxed abdominal wall.

The stomach contents, expressed after an Ewald test breakfast, showed nothing abnormal. Examination of the stools was negative for blood, mucus or ova. Rectal examination revealed nothing abnormal.

On August 17 the leukocytes numbered 18,800 and the percentage of polymorphonuclear cells was 83. A blood culture taken on this day remained sterile. On August 20, the leukocytes were 37,800 and the polymorphonuclears 92 per cent. The abdomen at this time was somewhat tympanitic but was free from muscular rigidity and tenderness. The area of liver dulness remained unchanged. The heart sounds also had not changed. A few crackling râles could be heard at the bases of both lungs; the tongue was dry and brown.

It was evident that the patient was suffering from some severe septic condition but the nature and site of the trouble was still altogether obscure.

August 21, the patient failed rapidly, passed into a stupor, developed pulmonary edema and died at 9 p. m. In the light of the subsequent autopsy findings it is to be regretted that a systematic examination of the sensibility of the trunk should not have been made, but our attention was centered on the acute, febrile condition which seemed to be quite unrelated to the antecedent tabes.

Autopsy.—Fifteen hours after death. Dr. Symmers (condensed report). On opening the peritoneum about 500 c.c. of milky fluid escaped. The peritoneum is diffusely opaque, swollen, edematous and in many places covered with an abundant fibrinous exudate. The serosa of the intestines is opaque and the intestines are in many places matted together by fibrinous exudate. In the appendix a round perforation, the size of a 10-cent piece, is found. The edges of this are necrotic and covered with fibrinous exudate. A probe passes directly into the lumen of the appendix, the mucous membrane of which is necrotic and discolored.

Pleura and pericardium normal.

The heart is moderately increased in size and flabby. The endocardium is in good condition. The aorta is large, the intima presents many yellowish plaques alternating with pale, hyaline, wrinkled areas. Heart muscle shows post-mortem changes.

The lungs show only emphysema and edema.

The spleen is increased in size, soft and friable. The Malpighian bodies are not visible.

The kidneys are moderately increased in size. The capsule is thin, strips readily and leaves a smooth, pale surface. Cortex and medulla are well differentiated. Cortex is broad, swollen, opaque. Markings very indistinct.

Liver considerably increased in size. Cut surface smooth, yellowish in color and very friable. Markings indistinct.

Stomach presents the lesions of atrophic gastritis.

Intestines show little change.

Bladder and prostate fairly normal.

The spinal cord shows considerable grayish discoloration, involving the posterior and lateral tracts, which is chiefly confined to the dorsal region.

Microscopic Examination (Dr. Schlapp).—From the sacral region up into the upper part of the dorsal there is a very marked degeneration involving practically the whole of the posterior columns, showing that the root zones in the dorsal region were involved as well as those in the lumbar and sacral region. The fibers in the cornucommissural tract are partly normal as are also a few fibers in the root zones. The root zones and the column of Burdach are intact in the cervical region. In both of Clark's columns the fibers are missing. On one side of the cord most of the cells are missing and those that are present show an abnormal condition in that they are very much smaller than is the normal cell in Clark's column. The cell-body has shrunken, the nucleus has also shrunken and most of the cells in both of Clark's columns contain a large amount of pigment. The cells in the anterior horn seem to be normal except that they contain quite an amount of pigment. The fibers in the posterior nerve-roots are almost entirely degenerated. The anterior nerve-roots throughout the sections of the cord are normal with the exception of a small bundle on each side which shows a marked degeneration. This degeneration, however, is sharply confined to this small bundle of fibers. The lesion extends up to the nucleus of Goll and Burdach, confining itself more or less to the column of Goll in the cervical region.

Here, then, was a man in good health, except for the rather mild symptoms of tabes, in whom an acute appen-

dicitis developed, progressed to perforation and a diffuse peritonitis and ended in death, without there having been at any time spontaneous pain, tenderness or protective muscular rigidity.

Instances of the almost complete absence of these three symptoms in the peritonitis which follows the perforation of a typhoid ulcer are not very rare, but they occur only in patients showing profound prostration and apathy as a result of the severe intoxication of the primary disease. In the present case, on the other hand, the appendicitis developed in a man in his usual health and with an alert mind and a clear sensorium. Under these circumstances it can hardly be doubted that the explanation for the absence of these three cardinal symptoms must be sought in the sensory disturbances of the tabes.

DISTURBANCES OF VISCERAL SENSIBILITY IN TABES

Disturbances of visceral sensibility in tabes manifest themselves in (1) the well-known painful "crises" of the stomach, intestines, bladder, larynx, heart, etc., and (2) a loss or diminution of the normal sensibility of certain of the viscera.

That such organs as the bladder, urethra, rectum and testicle may sometimes become anesthetic or analgesic has long been recognized. Gowers,[1] writing twenty-five years ago, notes the occasional loss of testicular pain, and adds that "the anesthesia may extend to the viscera when the trunk is involved. In consequence of the loss of sensation grave injuries to the limbs, such as burns, may be unperceived, and visceral disease may be unattended with the customary pain. Pleurisy, for instance, may be absolutely painless."

In recent years the subject of visceral anesthesia in tabes has received much attention from the French writers. It has been shown that complete anesthesia of both testicles occurs in about half of the cases and incomplete anesthesia in many more.

Normally, deep pressure or blows on the epigastrium cause a peculiar, painful sensation, with distress, collapse and sometimes even death. In about 20 per cent. of the cases examined this sensitiveness was completely lost.

In many cases there is a disappearance of the pain and distress usually produced by deep pressure on the trachea.

The pain occasioned by pressure on the globe of the eye and on the mamma is also frequently lacking.

Carrez,[2] who has reviewed the whole subject of the visceral anesthesia in tabes, concludes (1) that there exists no connection between the enfeeblement or abolition of the deep sensibility, testicular, mammary, epigastric, tracheal, ocular; and the superficial analgesia or anesthesia and (2) that there is no necessary relation between the deep analgesias and preexisting painful crises.

THE NATURE OF VISCERAL PAIN

Although it seems clearly established that in locomotor ataxia there is frequently a complete loss of the normal painful response to irritation of certain of the viscera, the mechanism by which, under normal conditions, visceral pain is produced is by no means well understood.

It is a fact familiar to physiologists and surgeons (see Lennander[3]) that such organs as the heart, stomach, intestines, liver, gall-bladder, uterus, etc., are usually entirely insensitive to procedures (cutting, pinching, burning, etc.) which in the superficial tissues would cause severe pain; and it has always been difficult to harmonize this fact with the every-day experience that in disorders of these viscera pain is a common symptom. Mackenzie[4] has recently offered a hypothesis to explain this paradox, and supports it by many interesting facts. He believes that the pain excited by disturbances in the viscera is due, not to the propagation of true sensory impulses from the viscera themselves, but to the reflex stimulation of the cerebrospinal nerves supplying the tissues overlying these viscera; in other words, that the pain and tenderness are felt, not in the organ itself, but in the tissues of the thoracic or abdominal wall over it. Afferent impulses passing from the viscus along the sympathetic fibers to the cells of the spinal cord excite there the neighboring centers of the sensory and other cerebrospinal nerves. "If a morbid process in a viscus gives rise to an increased stimulus of the nerves passing from the viscus to the spinal cord, this increased stimulation affects neighboring centers, and so stimulates sensory, motor and other nerves that issue from this part of the cord. Such stimulation of a sensory nerve will result in the production of pain referred to the peripheral distribution of the nerve whose spinal center is stimulated, so that visceral pain is really a viscero-sensory reflex. If the increased stimulation affects a motor center, then a contraction of a skeletal muscle results, and thus is produced the viscero-motor reflex."

This view of the nature of the pain excited by visceral irritation accords well with the familiar facts that such pain is often felt far beyond the boundries of the affected organ, and that there is often an associated hyperesthesia or tenderness of the skin and underlying tissues. In angina pectoris, for example, not only is the pain often felt in one or both arms but there is frequently also hyperesthesia of the chest wall and of the inner surface of the painful arm.

If this theory of the nature of visceral pain is correct (and there is much evidence to support such a view) it is obvious that the absence, in tabes, of the normal painful response to visceral irritation might be explained by assuming a destruction either of the sympathetic fibers bearing the afferent impulses from the viscera to the spinal cord, or of the spinal centers of the corresponding sensory cerebrospinal nerves. In the case cited here a lesion of the sensory cells of the cord alone would not, indeed, account for the conspicuous absence of muscular rigidity.

A lesion of the sympathetic fibers with interruption of the afferent impulses to the cord would, however, explain the absence both of sensory symptoms and of the reflex muscular rigidity. Is there evidence that such lesions of the sympathetic fibers occur in tabes?

LESIONS OF THE SYMPATHETIC IN TABES

Little was known concerning the condition of the sympathetic system in tabes until Roux,[5] in 1900, published his investigations on that subject. In all of the seven cases of tabes examined he found atrophy of a large proportion of the small myeline fibers in the cervical, thoracic and abdominal sympathetic trunks, whereas in ten subjects dead from various other diseases no such changes could be found. He believes that he is justified in concluding that this destruction of the small myeline fibers is a special pathologic condition of tabes, and that this lesion is responsible for the disturbances

1. Gowers: Diseases of the Nervous System, 1. edition 3, p. 454.
2. Etude clinique de quelques analgésies viscérales profondes dans le tabes. Thesis, Paris, 1903.
3. Observations on the Sensibility of the Abdominal Cavity. Translated by Baker, London, 1903.
4. Symptoms and Their Interpretation, London, 1909.
5. Les lésions du système grand sympathétique dans le tabes et leur rapport avec les troubles de la sensibilité viscérale, Thesis, Paris, 1900.

of visceral sensibility in that disease. In this view he has the support of Déjerine and Thomas.[6]

In the case recorded here no examination of the sympathetic system was made.

Whatever may be the true cause of the disappearance of visceral sensibility in certain cases of tabes, the fact that such visceral anesthesia does sometimes occur seems to be well established. That this fact has a practical application is evidenced by the fate of the patient under consideration, whose life was lost because of the failure to recognize an acute inflammatory process in the abdomen, demanding immediate surgical relief, which under ordinary conditions would have been only too obvious.

Concerning the frequency with which the abdominal viscera, in tabes, lose their normal, painful response to visceral irritation we have at present no data. It is known that complete loss of testicular pain is found in about half of the cases and a loss of "epigastric sensibility" in 20 per cent. or more. If the lesions of the sympathetic trunks found by Roux are as frequent as his investigations seem to indicate, it is not unlikely that disturbances of visceral sensibility in tabes may be much more common than has been supposed.

Concerning the means of recognition of such anesthesia of the abdominal viscera little can be said. Carrez concludes that there is no relation between the disturbances of visceral sensibility and of that of the overlying skin. The absence of testicular pain and of that produced by deep pressure on the epigastrium would at least suggest that there might be similar sensory disturbances in the abdominal viscera.

SUMMARY

The purpose of this report is to direct attention to the fact that in locomotor ataxia a loss of the normal sensibility of the viscera sometimes occurs, and that in such cases acute inflammatory diseases of the abdomen, such as appendicitis or peritonitis, may develop and run their course without at any time presenting any of the three symptoms of pain, tenderness and muscular rigidity. The loss of painful response to visceral irritation in tabes probably depends on a lesion of certain of the sympathetic fibers passing between the affected viscera and the spinal cord.

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ABSTRACT OF DISCUSSION

DR. LAWRENCE LITCHFIELD, Pittsburg, Pa.: I should like to ask Dr. Conner whether there was distention of the abdomen in the later stages of the man's illness, and, further, I should like to emphasize the point which he did not bring out sufficiently, that there was no relation between the superficial sensory nerves and those of the deeper structures. Within the past week I have seen a case of Pott's fracture in a tabetic, a man about forty-two years old, a syphilitic, who had been walking on his broken leg apparently for about two weeks before seeking advice. He had no anesthesia of his feet, he had no analgesia, he had barely appreciable hypalgesia of feet and limbs. He had good joint sense. Manipulation of the fragments elicited no pain. There was excessive swelling, which subsided after rest, with the application of icebags, after which the fragments were brought into alignment without the slightest sensation of pain.

DR. JOHN H. MUSSER, Philadelphia: It is one of the tragedies of appendicitis that it may frequently occur without either pain or tenderness or reflex spasm, and I have observed, in common with others, absence of these phenomena. Certainly, I have seen a number of these cases in various periods of life that I feel bound to say were not attended by or accompanied by locomotor ataxia. I am not stating this to disprove the statement of the author of the paper. I merely wish to emphasize the fact that these symptoms may be absent, and particularly is this the case in the gangrenous forms of appendicitis, in which, on account of the intensity of the infective agent, there has been an absolute cut-off of the nerve paths, consequently bringing about an absence of tenderness and an absence of reflex spasm. The one case that comes to my mind at the present time is that of a healthy adult who had various attacks. At first, the usual preliminary characteristics of slight gastro-intestinal disorder ensued, with vomiting, some slight distention, a little pain, slight fever and then disappearance of symptoms in forty-eight or sixty hours, no abdominal reflexes, no tenderness, no pain. The man was quite an athlete and amused himself by contracting his own abdominal muscles in order to show us that he was absolutely free from pain. Notwithstanding the fact that we urged operative procedures, he refused until the onset of symptoms of peritonitis in two or three days, which were then characteristic. The toxemia was sufficient to carry him off inside of forty-eight hours, notwithstanding the fact that we had an operation and found that he had a gangrenous appendicitis. The only serious symptom that he had was that due to distention of the abdomen. Of course, the peritonitis was recognized by the other phenomena of disease.

DR. C. F. HOOVER, Cleveland: The dissociation of sensory percepts in tabes brought out by Dr. Litchfield, recalls to me a similar experience with a patient with Pott's fracture which was perfectly painless. The man could perceive the vibration of the tuning fork perfectly well. If the fragments were rubbed together he would say "I can feel a grating, but can feel no pain."

DR. LEWIS A. CONNER, New York: The patient had, in the last two or three days of his illness, moderate distention, although the abdomen still remained soft. Of course, as Dr. Musser says, cases of appendicitis do sometimes occur, especially in children, in which the usual symptoms of pain, tenderness and muscular rigidity are almost entirely lacking; but, in my experience at least, some one or other of these symptoms has always appeared at some time in the course of the disease. In the case under discussion, it was the complete absence of these symptoms throughout the entire illness that made it seem so remarkable.

6. Maladies de la moelle épinière, Nouv. traité de méd. et de thérap., 1909, xxxiv, 588.

TEACHING THE PRINCIPLES OF SURGERY *

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The surgical practice of twenty-five years hence will be what the surgeons of to-day make it, but the teachers of our medical schools cannot accomplish needed reforms until the members of the profession as a whole recognize the importance of such changes and give their support. When we consider the conditions in medical education twenty years ago—no preliminary requirements for medical study, a two years' course and little clinical and laboratory teaching—we realize how much has been accomplished. The higher place of the profession in public regard, better medical care for our own families and friends, larger fees, with the increased comfort and pleasure in living that they bring, have resulted from the efforts of the veteran leaders in the profession of to-day. These changes have not been brought about in a day, but are the result of long-continued and united effort. There is no possibility of standing still; we must advance or

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fall back. It is difficult or impossible to influence the work of the older members of the profession. Our chief hope for better things lies in more efficient training of the students who are to make up the body of practitioners ten years from to-day.

SOME FAULTS OF PRESENT SURGICAL TEACHING

One great fault of present-day teaching is that too little consideration is given to the relative value of what is taught. In practically all of our medical colleges surgery is taught as if all the graduates were to become surgeons. In much the same way instruction in nose and throat, eye and ear, or in anatomy, is given as if our medical graduates were all to be specialists. Relatively few graduates will actually practice major surgery, yet in several schools the students are taught to perform gastro-enterostomy on animals, in many cases apparently to the neglect of instruction how to treat a carbuncle, felon or lacerated wound, which every graduate, whether a surgeon or a general practitioner, should know how to handle. This is true of many other of the common surgical diseases and injuries, which are more or less neglected while the students are taught the technic of major operations which most of them will never perform. It seems almost unnecessary to insist that medical students should be taught most thoroughly those things which all practitioners should know, whether they specialize in surgery or not. Among these important fundamental topics may be mentioned anesthesia, antisepsis, the arrest of hemorrhage, more thorough training in surgical diagnosis, symptomatology and prognosis, and the treatment of common forms of surgical disease and injury. Such men as are ambitious to specialize in surgery should give themselves the years of training in hospitals and as assistants to experienced surgeons which alone will fit them to undertake major surgery safely.

The clinical teaching of to-day has undoubtedly many advantages over the strictly didactic teaching of former years, but there is still too much teaching at long range. A clinical lecture before an amphitheater full of students too far away really to see anything is not necessarily a better form of teaching than the didactic lecture; the subject is far less likely to be well thought out and to be clearly and systematically presented. In both the general clinic and section teaching there is always the temptation to present the unusual and rare conditions, conditions which interest the teacher, to whom the ordinary disease and injury are commonplace. As a result of this tendency many of our present-day graduates are quite as likely to be better posted on the latest technic of blood-vessel suture or brain surgery than on the diagnosis of appendicitis or gall-stones, to say nothing of the treatment of leg ulcer. And, finally, the value of student acquirement is tested by a written examination in which the man with the glibbest gift of language succeeds best, but which is really scarcely a more rational way of testing a student's practical knowledge than it would be to test a tailor's ability to select good material and make a well-fitting suit of clothes by a written examination. As long as the student knows that the chief criterion of his work is to be a written examination he will devote a large part of his time to cramming for such examination at the expense of those facts with regard to diagnosis and treatment which will serve him best in actual practice. Experience of many years in Germany has demonstrated that there are other ways than the written examination of testing the fitness of a student. There, clinical and laboratory examinations are regularly given, and it is encouraging to note that many of our hospitals and some state boards are beginning to require some such tests.

TOO LITTLE ATTENTION TO TEACHING SURGICAL DIAGNOSIS

Nearly all who are familiar with the situation in modern surgery will admit that a very large number of patients whose best interest demands prompt surgical care fail to get to the surgeon early enough and in many cases not at all. In the acute diseases, especially abdominal and bone diseases, the results to the patient are often disastrous. The blame for this state of affairs lies in large part at the door of our teachers of surgery. The hours which should be spent in teaching surgical diagnosis are given over to clinics which are more useful in demonstrating to the student the skill and boldness of their teacher as an operating surgeon than those subjects which would be really most useful to them in practice.

Hence it comes that many cases of early joint tuberculosis, osteomyelitis, flat-foot and other conditions are treated for rheumatism until the patient's chances for satisfactory recovery are greatly reduced; hence cases of chronic appendicitis, gall-stones, gastric cancer and ulcer are frequently treated for dyspepsia until the favorable time for surgery is past; hence many unnecessary deaths from intestinal obstruction, perforated gastric or intestinal ulcer; hence in many cases chronic ulcers or gall-stones give rise to cancer, or the ulcerated cervix, uterine fibroid or benign breast-tumor undergoes malignant change. The original condition is readily curable; neglected, it too often results in a hopeless situation. These facts regarding malignant degeneration of benign growths and influence of chronic irritation and ulcer in causing cancer have been often reported by reliable observers. We cannot make a skilled diagnostician of every practitioner, but more teaching of surgical diagnosis instead of operative surgery will certainly help.

LABORATORY METHODS IN TEACHING ANTISEPSIS

When, as has sometimes happened in the past, a surgeon gets into trouble with infection, he calls in the bacteriologist to locate the break in technic. We then acknowledge that the laboratory is the final test of our aseptic and antiseptic technic. Why should we not study hand disinfection, sterilization of instruments, sutures and ligatures, dressings and textile materials in the laboratory? For six years such laboratory teaching in antiseptic technic has been given the students of Ithaca division of Cornell University Medical College, and from this practical experience it has been found that such laboratory teaching can be given within a very limited laboratory period, providing the course is well organized. The students are greatly interested in the work and get great benefit from it. When such first-hand teaching of the value of antiseptic methods is common the widely advertised proprietary antiseptics which are claimed to be as powerful germicides as phenol and mercuric chlorid will not have so wide a sale.

In such laboratory teaching the students are assigned several of the more generally used methods of skin disinfection. They smear their fingers with a bouillon culture of bacteria, some using an ordinary vegetative form and some a spore-bearing form. Non-pathogenic bacteria may be used to eliminate any possible danger of infection; for example, *Bacillus subtilis* is a harmless germ to use but very difficult to kill. After rubbing the culture into the skin thoroughly the student proceeds to

scrub as he would for an operation. Two tests of the efficiency of the clean-up are made. First, a piece of sterile string is drawn through the fingers several times, giving about the amount of friction one gets from ordinary handling of instruments and materials. The string is then dropped on an agar slant, and placed in the thermostat, where developments are watched. Second, to ascertain whether the deeper layers of the skin have been disinfected, the superficial epithelium is scraped off with a sterile scalpel and some of the deeper epithelium is put on a culture medium. Before these tests of results are made the excess of antiseptic is washed off with sterile water. Results show that a fairly long and thorough scrub is necessary if complete disinfection is to be obtained, and that there is a decided difference in the value of commonly used methods. To test the thoroughness of disinfection of materials a piece of string saturated with culture is placed in the inside of various pads which are tested in the ordinary steam sterilizer without pressure, the formaldehyd sterilizer, the hot-air sterilizer and the autoclave with superheated steam under pressure. These experiments easily show the students the superiority of superheated steam under pressure and that under ordinary conditions it is about the only reliable and practical agent by which spores in textile materials may be certainly killed.

The disinfection of instruments is tested by grasping a bit of infected string firmly in the jaws of forceps which are tested by boiling, soaking in antiseptic solution and exposure to formaldehyd vapor. It is easy to demonstrate the fact that a few minutes' boiling or soaking in phenol solution will not certainly kill spores and bacteria which may be lodged in some crevice of an instrument. These practical tests of common methods will explain many cases of low-grade infection, phlebitis, embolism and disastrous cases of tetanus which are sometimes considered unexplainable accidents of surgery.

THE TEACHING OF ANESTHESIA

Almost any graduate in medicine, if confronted with the necessity of an operation for himself or one of his family, would consider the choice of an anesthetist next in importance to the choice of his surgeon. Not only the safety but the comfort of the patient is greatly concerned. Practically every graduate has sooner or later to give a general anesthetic, yet students in many schools are still graduated without any practical instruction in the administration of anesthesia.

Three kinds of instruction seem to me highly important in general anesthesia: first, class-room instruction; second, laboratory demonstration, or, better still, individual laboratory work for each student to determine definitely the effect of the more generally used anesthetics on circulation, respiration and, if possible, also on the kidneys. A student who has followed carefully the heart's action on a smoked drum with ether and with chloroform will have no question as to the relative heart depressant effect of these two most commonly used anesthetics. Regular charting of the blood-pressure curve is also valuable, although not nearly so striking as the effect on the heart itself. Such instruction has been given in the laboratory of physiology and pharmacology at the Ithaca division of Cornell University Medical College for several years, and it cannot fail to have a great influence in deciding the intelligent student as to his choice of an anesthetic.

A third and more important matter is instruction in the practical administration of anesthesia. This may be readily managed in such a way as not to prejudice the chances of the patient. Any surgeon who has enough operative experience to fit him to teach at all should be able from his own clinical material to give his students at least a limited practical experience in general anesthesia. I am accustomed to detail each student of my class in turn to go with the anesthetist during one or more general anesthesias. The student is instructed about the amount of anesthetic to use, indications for more or less anesthesia, how to hold the jaw, protect the eyes, look for false teeth and many other details which experienced anesthetists always keep in mind. After observation of the anesthetist and practical instruction in one or more cases the student is allowed to give the anesthetic himself, always under the direction of an experienced anesthetist. Some students give twelve or fifteen anesthesias and become fairly proficient. Practically all of them are impressed with the importance of the subject and become familiar with a few, at least, of the principles. All are certainly much better equipped to give a general anesthetic than they would be if the subject of anesthesia was entirely neglected in the class-room and no practical instruction given, as was the case when many of us graduated in medicine. The laboratory work, together with thorough discussion of the subject in class, adds much to the value of the practical instruction in the operating room. The student has thought about the matter before, knows what to look for, what to observe and gets much more out of a few carefully supervised anesthesias than he would from many times the number given haphazard without any previous thought on the subject.

USE OF CURRENT LITERATURE RATHER THAN EXCLUSIVE USE OF TEXT-BOOKS

The progress of medical men after graduation is influenced greatly by the journals and books which they read and the way in which this reading is done. The average text-book is fully five years behind in many important topics. Considering the great value of systematic reading of journals, it seems worth while to try to stimulate students to do independent reading, to select the valuable from the worthless and to economize time in getting over the vast literature which is appearing to-day. With this object of teaching students better to use surgical literature, during the past five years I have in certain subjects assigned articles in current journals rather than in text-books. As an example, in studying the subject of general anesthesia the students have been assigned articles dealing with the effects of general anesthetics on the heart, the kidneys, articles reporting large series of spinal anesthesias, ethyl chlorid and nitrous-oxid anesthesias, local anesthesias, etc. Each student has to make a short written abstract which can be read in five minutes. Several of these abstracts are read, criticized and commented on in class at a kind of conference. With a few suggestions on the selection of the important from the unimportant in medical reading, it is surprising how well the average student will succeed in getting the meat from a journal article. Many of the abstracts compare very favorably with the abstracts appearing in most of our medical journals. Each student gets a good deal of definite knowledge about one of the subjects, and in the class discussion he hears the latest ideas, culled by other students from other articles. In this way the entire sub-

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ject can be covered by abstracts taking up various phases of the question and the students are invariably much more interested than in text-book recitation work, and they get the latest knowledge. They also become familiar with some of the best journals and know where to look for reliable information when they are thrown on their own resources. Very much of the progress of most practitioners depends on their ability to use surgical literature efficiently, and without much systematic, effective reading, very few men keep abreast of modern methods. It requires a little additional thought and good judgment on the part of the teacher to select and assign references for the subject under discussion, but it is surprising how easily possible it is to get together a student symposium on almost any surgical topic from the current literature if one has this method of teaching in mind. A difficulty is too much good material to assign rather than too little.

Thus far I have spoken chiefly of the faults of present methods of teaching and of a few methods which seem better adapted for instruction than those now in general use. Far more important than methods of teaching is the quality and previous preparation of the students who are to be taught, the qualifications and the abilities of their teacher and the facilities for work. With regard to the student himself and his preliminary preparation for medical study, I believe that few if any teachers in universities requiring a college degree as a preliminary to medical study would feel satisfied to go back to teach high-school graduates. It is true that the higher entrance requirement shuts out some worthy men, but there will always be plenty of schools that will offer these men as good facilities for work as they can profit by. If the secondary schools would rearrange their curriculum and select only those subjects necessary for college entrance it would be possible for students to take the preliminary degree at 21 without any difficulty, and this is really about as early as a man can profitably begin the study of medicine. With such an arrangement a student would take practically all of his science work in a college, where facilities for teaching are far better than in any except in a few of the best preparatory schools.

The ideal medical school should be a department of a well-established university, for the universities are in a position to uphold the higher standard of education. In too many cases the university only lends its name and has no influence in appointment of teachers, in methods or standards of work, maintenance of the indispensable laboratories and clinics or financial support for expensive teaching. The financial rewards of surgical practice are great enough so that special effort is necessary to get men who will devote sufficient time, thought and effort to teaching. Conditions in engineering and law are similar, but have universities not done much more for these than for surgery and the practical branches in medicine? Even some of our best universities at present are obliged to choose their professors because of their affiliation with some large hospital which supplies clinical material. The university clinic should be independent of outside influences and the university should be free to choose as professors any man of ability, regardless of hospital connection. A university surgical clinic used for the joint purposes of relieving the sick, teaching, and investigating important problems, is as necessary a part of the equipment of a university as the laboratory of chemistry or of anatomy. In selecting teachers of surgery, teaching ability as well as operative skill should be considered. In some cases the professor of surgery is appointed because of hospital connection, and the hospital connection comes as a result of political, financial, social or even religious influences. Such factors should not figure to any extent in appointments. The professional and teaching ability and high character of the man should be the test. The university medical college can best maintain the necessary high standard for entrance and solid requirements for work during the course and for graduation.

While there are many teachers among us who are devoting much thought and effort to their teaching and accomplishing great results, there is probably no subject in the medical curriculum more poorly taught than surgery. This is easily understood when we remember that a majority of teachers in surgery devote nine-tenths of their thought and effort to the practice of their profession and one-tenth to teaching. Practically all teachers are inadequately paid considering the compensation which a surgeon can earn in the actual practice of his profession. Not all successful practitioners are good teachers. A certain amount of practice in teaching is important to successful teaching, and the man who is ambitious to teach might well begin in a subordinate position early. Men of scholarly tastes and good ability who are willing to make some sacrifice should be given the preference, but they should be sufficiently well paid so that they can afford to devote a reasonable amount of effort to actual teaching. Ability to present a subject clearly and systematically is to a great degree born with the man, and born teachers should be sought for and promoted in this country as they are to-day in Germany.

The general public is really most concerned of all in the efficient teaching of surgery. The field of surgical intervention is widening every year. In the future more than in the past the health, happiness, efficiency and even the lives of a large number of people in every community will depend on the judgment and skill of the surgeons of their community. When the public realizes this more fully, support of our medical colleges and research laboratories will be much more liberal than it has been in the past. All the profession are also concerned, not only for the welfare of ourselves and our families, but for the honor and prestige of our profession. The student is concerned, for on the efficiency of his instruction depends much of his success in earning a livelihood. Our universities are concerned, for the progressive work of their teachers will spread their name and fame to the community. Those at the head of educational affairs in our universities have accomplished great things in the past and much will depend on their interest and effort whether they progress as rapidly in the future. The whole medical profession must work for better methods of teaching in surgery as well as in other subjects. The Medical Council of the Association has done splendid work during the past few years, and we may look for a great deal from their effort in the years to come.

CONCLUSIONS

To recapitulate some of the methods and conditions which seem likely to promote ideal teaching: Emphasis should be laid on the principles and methods rather than on a mass of disconnected facts presented without coordination. Thorough study of a few essential subjects is much to be preferred to a superficial covering of much ground. Antisepsis and arrest of hemorrhage may well be taught by practical work in the laboratory and operating room as well as in the class room. Anesthesia

should also be taught in the laboratory and operating room as well as in the class room. Practical and laboratory tests should be given when possible, instead of written and oral examinations. Current literature can be profitably used in some cases instead of exclusive text-book instruction. University connection and standards of work are desirable. The university should control its independent hospital, where students will have an opportunity to study important surgical diseases and injuries throughout the entire course of the cases. Surgical diagnosis should be given more attention than major operative surgery. The public should be trained to appreciate the importance of sound medical and surgical teaching and urged to supply sufficient funds so that our universities and clinics can be well equipped and supported. Surgical teaching should be paid liberally enough so that a professor can afford to limit his practice and devote the necessary time to well organized, systematic teaching without too great sacrifice. Many of these ideals are practical and realized or being realized in some schools. Other conditions demand earnest and united effort of the whole profession if we are to advance in future as in the past.

ABSTRACT OF DISCUSSION

DR. J. CLARK STEWART, Minneapolis: We have certainly come to the parting of the ways in surgical teaching, and both standards and methods of teaching need revision. All physicians are familiar with the readiness of recent medical graduates to rush in and do major surgery, their first attempts at abdominal operations being saved from fatal results by the grace of God and access to a clean operating-room. These operations preserve the life of the patient, but how little benefit is often obtained in the absence of careful diagnosis and knowledge of the conditions exposed! Our older methods of clinical teaching, by which the teacher, depending for his remuneration entirely on the glory attained among his students, presented to them only the most showy and unusual operations, together with the general exaltation by the profession of technical skill over pathologic knowledge, is largely responsible for this attitude. All this must be changed. Pathology and diagnosis must be taught, and the operative clinic must be minimized. Clinical teachers must be paid for their time, and must teach students surgical diagnosis at the bedside and in the amphitheater. Each school should have its own hospital, where extern work can be done by all advanced students, and the operations before the class should be restricted, so far as possible, to the cases carefully studied by the students. Clinical examinations, where students actually diagnose surgical conditions, are most important tests of student knowledge.

The need of improvement in surgical qualifications is a crying one, and well understood by the laity, who are becoming restive under the indiscriminate operations of the profession. In Colorado recently this feeling culminated in a bill to restrict the practice of surgery to the licensees of a state board appointed by the governor. This bill, fortunately, was defeated, for although the end desired was worthy, the means assigned needed much improvement. Such legislation is likely to be advanced in other localities in the near future, and the profession must be prepared to meet the demand for better and more responsible surgeons. In Minnesota we are going to anticipate such popular demand by offering an advanced degree in surgery, master in surgery, open to graduates of reputable schools of five years' standing, including one year's satisfactory hospital service and based on the results of one year's work in surgery done in residence in the University of Minnesota. We think this degree will be popular and that enough of our younger surgeons will avail themselves of it to form a nucleus of high standard men to whom the public will look when they ask for higher surgical qualifications.

DR. L. J. HIRSCHMAN, Detroit: The trouble has been that the faculty of the average medical college has consisted largely of general surgeons, so that the students have received a lopsided education in surgery. Then they are turned out to be abdominal surgeons. How many students are taught how to treat a simple case of hemorrhoids or to enucleate a tonsil, which everybody is called upon to do? There has been too much spectacular amphitheater teaching and too little real teaching. State boards must require a more rounded-out education than they now do. The Association of American Medical Colleges mentions in its curriculum twenty-seven different subjects; diseases of the rectum and anus are not included in the list, but are supposed to be taught under general surgery, though as a rule they are not. There is no subject which is so important and which is such a fruitful source of income for the advertising quack.

COMPRESSION OF THE SPINAL CORD CAUSING PARAPLEGIA

AND ITS SURGICAL TREATMENT *

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The conditions which demand surgical interference in paraplegia due to compression of the spinal cord are by no means clearly defined. There are two chief reasons for this: first, the difficulty in diagnosing accurately the cause of the paraplegia; and second, the difficulty of distinguishing between cause and effect when we attempt to determine the results attained by our surgical interference. When a cure results after operation it is often impossible to make sure that recovery would not have ensued had Nature been left unaided to pursue her course. Nevertheless, it is obvious that certain cases are definitely improved by surgical interference, and not infrequently it holds out the only hope of relief. In attempting to define the indications for operation I have made a study of fourteen cases which have come under my care.

Hemorrhage within the neural canal may be the cause of the compression. This may be extradural from rupture of the spinal veins, or subdural; or it may be into the substance of the cord. When an interval of time elapses between the infliction of the injury and the occurrence of the paralysis the possibility of the compression being caused by extravasated blood must be borne in mind. This point is illustrated in the following cases:

CASE 1.—A man fell from a height of 16 feet to the ground, he got up, picked up his hat, which had fallen off, and used both hands to put it on his head. He said that he was not hurt and walked four or five yards to his house where he lay down on the sofa. Five or six minutes afterward he observed a numb sensation in his arms and hands and he rapidly became completely paraplegic below the sixth cervical spinal segment. Operation was refused and the man died six months after the injury without improvement.

CASE 2.—A man, aged 35, fell off the top of a lumber-pile 8 feet to the ground. He got up with the help of two men and having his arm over the shoulder of each he walked to his house 50 yards distant, being able, though weak, to move one foot in front of the other. Within an hour he became completely paralyzed below the seventh cervical spinal segment. He died a year afterward without any

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material improvement in his condition. On autopsy a transverse fracture of the sixth cervical body was found without forward dislocation, the anterior posterior diameter of the neutral canal was narrowed to one half its normal width. Unfortunately no examination of the cord was made.

It may be impossible to determine whether the hemorrhage is extradural or beneath the meninges. Severe pain may indicate pressure on the nerve-roots, where considerable hemorrhage has occurred, either within the dura or outside of it. On the other hand, hemorrhage into the cord is more likely to give definite and isolated tract lesions, so that we may have such conditions as "crossed paralysis," etc. Then, again, hemorrhage may be confused with the effects of congestion at the seat of injury. The results of hemorrhage are likely to manifest themselves at an early date, often within a few minutes after the injury, while the paralysis due to congestion may be deferred for twenty-four hours or more.

Where there are symptoms pointing to hemorrhage outside the cord causing paralysis, it is, I believe, the better plan to operate at an early date and not to delay with the hope that absorption of the clot may take place. The fact is that absorption may not occur and valuable time may pass during which operation might have been of service. This was illustrated in the following case:

CASE 3.—A lad 10 years of age was accidentally shot in the neck. The bullet (22 caliber) was extracted above the right shoulder-blade. The patient was immediately paralyzed below the eighth cervical spinal segment. Four months and a half subsequently laminectomy revealed dense connective tissue surrounding the dura, due possibly to a perithecal inflammation, or, more likely, an old hemorrhage with organized blood-clot. The dura beneath appeared quite normal. No improvement followed the operation. It is now nine and a half years since the injury, and the lad is still alive in the Home for Incurables, Toronto.

It is obvious from this case that surgeons are wrong in teaching that bullet-wounds producing cord lesions should be left without operation.

Individuals who are subjected to severe injury to the spine and the cord may succumb to the initial shock, death usually taking place within a few days of the accident. This is illustrated by the two following cases:

CASE 4.—A man aged 30 was admitted to hospital. Four hours previously he had fallen 12 feet and been struck by a plank as he fell. He became immediately paralyzed below the seventh cervical segment. The patient died within a week of the injury, never having recovered from the shock.

CASE 5.—The patient was a laborer aged 30, on whose back a brick chimney fell from a height of 10 feet. Complete motor and sensory paralysis below the level of the eighth dorsal segment occurred immediately. On admission the patient was in a state of complete collapse from which he rallied somewhat but died on the third day. Autopsy revealed a fracture dislocation at the level of the sixth and seventh dorsal vertebræ.

Acute flexion of the cervical spine producing stretching of the cord with hemorrhage into its substance is noted in one of my cases.

CASE 6.—A lad, 14 years of age, was standing in a shed when the roof fell and pinned him down with his neck flexed acutely forward. He was rendered unconscious for a time, but, on being released, found that he had lost the power to move the right leg and both arms and all sensation in both arms and legs. Twenty minutes after the accident sensation began to return, but voluntary control of the muscles was only gradually restored. In the course of a few weeks, however, the patient was able to walk fairly well. Twelve weeks after the accident his medical attendant is said to have operated for the purpose of removing a piece of bone which was pressing on the spinal cord. The immediate result of the operation was completely to abolish motion and sensation in the upper and lower extremities. Subsequently this was restored to a limited extent but the condition did not change much for twelve months; then the patient came under my observation. There was then extreme wasting of the muscles of the upper extremities, but the loss of motor power was not absolute. There was almost complete paralysis of the trunk muscles and those of the lower extremities, but there was no impairment of sensation, and the bladder and rectum were under voluntary control. There had obviously been destruction of the anterior horn of gray matter of the brachial enlargement below the sixth cervical segment with damage to the motor conducting paths. The sensory conducting paths had evidently escaped injury. The patient died unimproved of pneumonia five years after the accident.

Early operation for the relief of compression after fracture is occasionally instrumental in restoring function, notably in those cases in which the compression is caused by fragments of the neural arch which have been driven forward into the neural canal.

CASE 7.—A man, aged 37, was struck on the top of the head and knocked over on his back. Paralysis below the fourth lumbar segment immediately ensued. At operation, which I performed, fifteen days after the accident, the neural arch of the third lumbar vertebra was found to have caused a rent in the dura mater; it was depressed on the cauda equina. The lamina of the second lumbar vertebra was also fractured and depressed and there was a small quantity of blood-clot in the neural canal. Sensation was restored and motor power gradually improved. By the end of the third month the patient had complete control of the bladder and rectum. At the end of the year he could walk with very slight assistance and complete recovery seems probable.

The benefit of operation in such cases is also illustrated in the following case:

CASE 8.—A lad, aged 16, was hit on the back by a falling tree and immediately lost sensation and motor power below the first lumbar segment. Laminectomy was performed on the thirty-second day after the accident. The laminæ of the twelfth dorsal and first lumbar vertebræ were fractured and the superior articular process of the first lumbar was also fractured. These fragments of bone were driven into the neural canal, and there was a rent 1 cm. long in the dura mater. Two days after the operation sensation began to improve, and one month thereafter some restoration of motor power was noticeable. Gradual improvement took place. It is now two years and eight months since the operation and the patient is able to stand with slight support but he cannot walk alone. He has, however, complete control of the organic reflexes, giving him control over the bladder and rectum, and this fact alone would be sufficient to warrant operative interference, if, indeed, in this case the restored function is to be attributed to the surgical measures employed.

It is quite impossible to determine with absolute certainty that the spinal cord is completely severed. Undoubtedly the most reliable sign of a complete transverse severance of the cord above the lumbar enlargement is the complete and permanent abolition of the knee-jerks and ankle-clonus; but valuable time is lost if we wait for this test in traumatic cases. One must urge that in the light of experience we should operate early where doubt exists. The following is an instance in which, unfortunately, the damage to the cord was irreparable:

CASE 9.—A man, aged 40, fell 8 feet and injured his spine. Doubt existed as to the amount of damage to the cord. There was complete paralysis of sensation and motion below the tenth dorsal segment. Three days subsequently laminectomy was performed. The left inferior articular process of the ninth vertebra, along with a

portion of the neural arch, had been driven in on the cord, which was completely severed and pulpified, the two ends being separated nearly 2 cm. The wound healed by a primary union, but the patient died suddenly 25 days after the operation from pulmonary embolism, which at autopsy was found to have originated in the prostatic venous plexus, the thrombosis there having possibly been induced by the frequent use of the catheter.

Passing now from traumatic lesions of the spinal cord, I shall refer briefly to compression paraplegia the result of disease. The most common condition here is that encountered during the progress of spinal caries. The cause of the compression may be thickening of the dura (pachymeningitis), a collection of caseous material in the neural canal, or the pressure of an abscess. A tuberculoma may exist in the interior of the spinal cord, as in a case reported by Kraus and McGuire.

Paraplegia in Pott's disease is frequently amenable to less severe measures than laminectomy. Many patients may be cured by rest with extension, but occasionally operative interference is necessary, and it certainly is so in cases in which abscess is the cause of the trouble.

In the two following cases, in which I operated, I found an abscess invading the neural canal from in front and pressing on the spinal cord:

Case 10.—A man, 60 years of age, with compression paraplegia more or less complete and due to spinal caries, the symptoms having existed for two years, was subjected to laminectomy. The sixth, seventh, and eighth dorsal laminæ were removed. The cord was compressed by an abcess which had invaded the neural canal in front of the dura. The man died, forty-one days after the operation of tuberculous meningitis. The autopsy showed a sterile condition of the mediastinal abscesses, which contained no longer fluid, but a mass of caseous material which had replaced the pus.

Case 11.—The patient was a child 6 years of age with paraplegia from Pott's disease existing for eighteen months prior to operation. Pus was found in the neural canal at the level of the fifth dorsal vertebra. The wound healed completely, but the child was unimproved and died eighteen months after the operation. Unfortunately no autopsy was obtainable.

The lesson I have learned from these two cases is that operation for the relief of paraplegia in Pott's disease should not be deferred too long. I did not have an opportunity of operating at an earlier period, but I am sure that the chances of success are diminished when operation is postponed beyond a reasonable time. I should urge that if paraplegia is not relieved after treatment by extension applied for, say, three months, then laminectomy should be done unless contra-indicated by the general condition of the patient.

It is obvious that in many instances, notably in tumors, valuable time is lost while medicinal measures are persisted in. Meanwhile the cord is damaged beyond repair, and operation is undertaken too late to effect a cure or again a malignant growth may have advanced so far that radical removal is impossible.

My point is illustrated by the following case, in which a tumor pressing on the spinal cord produced paraplegia, but operation was not undertaken until it was too late to eradicate the growth:

Case 12.—A man 52 years of age with symptoms of impaired sensation and motion below the seventh dorsal segment was treated assiduously by drugs for some two years when laminectomy was performed, and a sarcomatous growth revealed, which was pressing on the spinal cord at the level of the fifth dorsal vertebra. Subsequent to operation a certain amount of motor power returned but pressure symptoms recurred and the patient died eleven months after operation. At autopsy extensive recurrence of the growth was demonstrated.

Similarly, in the following case, operation was undertaken too late:

Case 13.—A girl, 19 years of age, for eight months prior to admission, had had progressive weakness of the lower extremities with a dull pain over the sacral region and extending down the thighs, and finally loss of the organic reflexes. Distribution of the areas of disturbed sensation was symmetrical on the two limbs and indicated a lesion involving the spinal cord below the third lumbar segment. Laminectomy was performed, and a soft gelatinous material was found lying on the dura. This was removed. The patient subsequently improved to a marked but limited extent with restoration of sensation and voluntary motor power, also some control over the bladder and rectum. After the lapse of two months she again began to lose ground. Five months subsequently a tumor under the left iliolumbar muscle proved to be a round-celled sarcoma. The patient is still alive, seven months after the first operation, but rapidly going down hill.

The following case illustrates the impossibility of determining the existence of a tumor pressing on the cord. Operation was clearly indicated and in such cases should always be carried out early, before the cord is damaged beyond repair.

Case 14.—A man, 30 years of age, complained of pain and stiffness in the back of the neck, extending down the limbs, with great weakness in the legs. These symptoms have gradually developed for a period of two years. Immediately prior to operation the paralysis was almost complete below the level of the fourth cervical segment and a laminectomy was performed, removing the fifth, sixth, and seventh cervical arches, when a vascular membrane was found on the surface of the dura and was removed. Three days after the operation, sensation began to improve and there was a gradual return of motor power, so that in the course of two months the patient had made an almost complete recovery and has now for more than a year been able to work continuously as a laborer. Dr. Goldie and I[1] have elsewhere reported the case as one of cervical hypertrophic pachymeningitis in which it was impossible to determine prior to operation whether or not a tumor was present. It is of interest to observe that the removal of a very small mass of tissue seemed to produce very definite improvement.

The question of the advisability of seeking relief by operative procedure in compression paraplegia is by no means one in which there is unanimity of opinion among the profession. One may say that in studying the series of fourteen cases presented in this paper one may come to certain conclusions which seem justifiable. We may dismiss at once the cases in which paralysis occurs as the result of compression in Pott's disease. Undoubtedly the patients should be submitted to operation when one fails to effect a cure by efficient rest and extension. The brilliant results obtained by operation in many instances is illustrated by a paper recently published by Mr. Donald Armour,[2] in which he records the history of a patient in whom a large abscess surrounded the cord and implicated the laminæ and bodies of the third and fourth cervical vertebræ. The abscess was opened, curetted and closed without drainage and healed by first intention. After four and a half months the patient was able to walk without assistance.

Similarly it is obvious that if a new growth is the cause of the compression the tumor should be removed

1. Goldie, W., and Primrose, A.: A Case of Cervical Hypertrophic Pachymeningitis with Exploratory Laminectomy, Canadian Pract. and Rev., 1909, xxxiv, 135.
2. Armour, Donald: Cervical Caries: Operation and Recovery, Proc. Roy. Soc. Med., 1908, i, Neurol. Sect., p. 64.

when that is feasible. The consensus of opinion at present would suggest that even when the growth is a syphilitic gumma operation for its removal is a wiser course than an attempt to cause its disappearance by the administration of drugs.

Pearce Bailey[3] quotes Stursberg to the effect that the percentage of cures in operation for tumor of the spinal cord is 32.2 per cent., but it is obvious that hitherto surgical interference has been delayed far too long in the majority of instances. The operation of laminectomy carefully carried out is not a dangerous procedure. I have not failed to get sound union in all the cases in which I have operated and there has been no operative mortality. Moreover, the stability of the spinal column is not appreciably interfered with by laminectomy.

Horsley,[4] reporting twenty-one cases, describes the condition of chronic spinal meningitis in which the symptoms simulate tumor and which is relieved by opening the theca and washing out with strong mercurial lotion. In his cases there was excess of cerebrospinal fluid under pressure. Bliss[5] describes a somewhat similar condition as "cysts within the spinal canal" and Spiller has recorded a case of like nature.

Paraplegia the result of traumatism presents a more difficult problem. Allen[6] of Philadelphia published the history of nine cases with post-mortem findings. His observations lead one to conclude that regeneration of the cord after complete transverse lesion is impossible, and this view is maintained by Spiller,[7] Murphy[8] and others.

Murphy records the results of experiments on dogs by various investigators and shows that in complete transverse section in these animals there is no restoration of function.

In the human cord restoration of function after division has not been demonstrated. It is true that there are some cases on record which would inspire the hope that regeneration of the cord might be possible after division.

Shirres[9] and Armstrong attempted to secure regeneration in a severed cord in man by placing a segment, 3 inches long, of the spinal cord of a large dog alongside the severed ends of the spinal human cord. The patient unfortunately died of a large abscess in the kidney three and a half months after operation. Up to that time there had been some subjective sensations in the lower extremities and in the lower abdomen, and a certain amount of tone was observed in the muscles of the right thigh and leg. At autopsy the dura and tissue at the site of the grafting experiment showed a mass of minute myeline sheaths of nerve fiber, which lay closely adherent to the dura mater, and when traced upward and downward united with the segments of the cord above and below.

A case is recorded by Harte and Stewart[10] of bullet wound in the mid-dorsal region in which the severed cord was sutured with partial restoration of function; and the report of a somewhat similar case with partial success is published by G. R. Fowler.[11] In such instances, however, one must entertain the suggestion that the severance of all conducting paths of the cord was not complete. Moreover, in operating on the injured cord it is not always easy to determine the exact amount of damage; the careful operator is willing to leave the cord undisturbed when all pressure is relieved, knowing full well that very slight manipulation of it may do further irreparable damage. Solieri reports a case most favorable for successful results after suture if such were attainable. It is that of a clean severance of the cord at the third dorsal segment by a long knife. Suture sixteen hours after injury was performed, but with negative results as to restoration of function.

It seems an undoubted fact that regeneration of the severed cord is impossible. Repair of nerve fibers ceases where the primitive sheath ends; the latter seems necessary for regeneration, and hence the fact that we have restoration of function in severance of peripheral nerves but the absence of such restoration in severance of the cord.

Kilvington[12] of Melbourne suggests the feasibility of nerve-crossing in the neural canal in cases of severed cord, and he has had most encouraging results in experiments on dogs by suturing the central end of one of the limb nerves to the peripheral ends of the nerve supply to the bladder and rectum. If it is possible by such means to restore control over the bladder and rectum it would indeed greatly diminish the misery of many unfortunates. He finds on the human cadaver that it is possible to unite the eleventh and twelfth dorsal, and possibly the tenth dorsal, directly to the second, third and fourth sacral nerves. The operation would necessarily be severe, and of course there would always be a danger of making matters worse by such operative measures.

Spiller concludes from his experiences that in most cases operation may do harm. He is not prepared to assume, however, that operation should not be performed in any case of fracture. We have undoubtedly learned that our gross manipulation of the spinal cord in operation may do a great deal of harm, but surely there is a possibility of guarding against this, at least to a great extent, and in our technic we should be extremely careful not to do damage. It is possible, for example, to remove depressed fragments of bone without any appreciable disturbance of the cord, and to remove a blood-clot which may be causing pressure. One cannot but be convinced that many such patients are benefited by operation, and without doubt the chances of successs are greatly enhanced if the operation is done early. Doubt often exists as to the cause of the compression. After studying 244 cases of fracture of the spine occurring over a considerable period of years in the Boston City Hospital, Burrell concludes that in many instances it is impossible to ascertain, except by open operation, whether the cord is crushed or pressed on by bone, blood or

3. Bailey, Pearce: The Surgical Diagnosis and Treatment of Tumors In and About the Spinal Cord, THE JOURNAL A. M. A., March 12, 1910, p. 849.
4. Horsley, Sir Victor: Chronic Spinal Meningitis, Brit. Med. Jour., February, 1909, p. 513.
5. Bliss, M. A.: Cysts Within the Spinal Canal, THE JOURNAL A. M. A., March 13, 1909, p. 885.
6. Allen, A. R.: Injuries of the Spinal Cord with the Study of Nine Cases with Necropsy, THE JOURNAL A. M. A., March 21, 1908, p. 941.
7. Spiller, W. G., Musser, J. H., and Martin, E.: A Case of Intradural Spinal Cyst, with Operation and Recovery; with Brief Report of Eleven Cases of Tumor of the Spinal Cord or Spinal Column, by W. G. Spiller, Univ. Pennsylvania Med. Bull., 1903-04, xvi, 27, 56.
8. Murphy, J. B.: Neurological Surgery, Surg. Gynec. and Obst., April, 1907, p. 365.
9. Shirres, D. A.: Regeneration of the Axones of Spinal Neurones in Man, Montreal Med. Jour., April, 1905.
10. Harte, R. H., and Stewart, F. T.: A Case of Severed Spinal Cord in Which Myelorrhaphy was Followed by Partial Return of Function, Tr. Am. Surg. Assn., 1902, xx, 28.
11. Fowler, G. R.: A Case of Suture of the Spinal Cord Following Gunshot Injury Involving Complete Severance of the Structure, Ann. Surg., 1905, xlii, 507.
12. Kilvington, B.: An Investigation on the Regeneration of Nerves, with Regard to Surgical Treatment of Certain Paralyses, Brit. Med. Jour., April, 1907, p. 988.

exudate; he further emphasizes the fact that if pressure on the cord is allowed to remain for many hours irreparable damage may take place. I agree with Carson[13] that unless it is perfectly clear that the cord is immediately damaged an open operation should be done to determine the condition present and to relieve pressure where that is found possible.

It has been demonstrated by several observers, *e. g.*, Allen,[14] Holmes[15] and others that the spinal cord may show very little alteration even on microscopic study and yet in reality may have ceased to be a conducting mechanism. May we not assume that such conditions may result from traumatism and that if so the continuance of conditions which might be relieved by operation may permanently destroy function? On this ground early operative interference is urged in traumatic cases wherever the element of doubt as to the cause of the paraplegia exists.

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TRAUMATIC FACIAL PARALYSIS

ANASTOMOSIS OF FACIAL NERVE TO SPINAL ACCESSORY, AND THE PERIPHERAL END OF ACCESSORY TO THE DESCENDENS HYPOGLOSSI*

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In nerve anastomosis, surgeons recognize the desirability of maintaining, by substitution where possible, the functions of all important muscles.

In paralysis of the face, no matter whether the spinal accessory or the hypoglossal nerve is used, paralysis of the trapezius and sternomastoid, or of the tongue, has been a necessary result, substituting a lesser for a greater evil. If this can be avoided by a more elaborate operative anastomotic procedure, it is a consummation most earnestly to be desired. The following case gives hope of a more promising future. I believe the complete operation in the cure of facial paralysis has not heretofore been done, and, for this reason, I have embodied considerable detail in the technic and clinical history.

Patient.—W. P. B., of Evanston, Ill., aged 26, while in his room at night on Sept. 15, 1908, received a pistol wound, 32 caliber, through his right ear, resulting in considerable hemorrhage and shock, and immediate paralysis of the right side of the face, with complete loss of hearing on the same side. He was confined to bed for two or three weeks, at the end of which time the wounds were healed. There was no evidence in the clinical history that the bullet had entered the brain. Four months and one week after the injury, the patient and his mother came to Denver to consult me as to the possibility of relieving the facial paralysis.

Examination.—This showed a scar at tip of mastoid where the bullet entered. The auditory canal was completely obliterated by bone. The tuning-fork was negative as to hearing; the right face completely paralyzed from the frontalis muscle to the mouth, with the usual facial asymmetry, the right side drooping and heavy from fatty degeneration. The right eye was a source of great discomfort from inability to close it and from profuse lacrimation. A radiograph previously taken showed the bullet lodged on the floor of the middle fossa in front of the ear. A second one (Fig. 1) taken by Dr. S. B. Childs of Denver showed the course of the bullet through the petrous portion of the temporal bone, leaving fragments of lead in its course and lodging in the middle fossa. From this, and the fact that there was no disturbance of taste, the conclusion was reached that the course of the bullet was forward and upward and cut the facial nerve in the space between the chorda tympani and the stylo-mastoid foramen. The chorda tympani leaves the facial at the lower part of the Fallopian duct where it turns downward, and quits the tympanic cavity just inside of the Glaserian fissure, finally joining the lingual nerve and ending in the anterior part of the tongue. There was no evidence of its being seriously injured. If the facial nerve was severed by the bullet after leaving the foramen, it would complicate the operation and make it difficult to find the stump.

Experiment.—I concluded to use the spinal accessory for the anastomosis; but before performing the operation, I desired to ascertain if it was practicable to make anastomosis of the peripheral end of either the spinal accessory or the hypoglossal, to a convenient motor nerve. With this purpose in view, and by the courtesy of Dr. S. B. Childs and Dr. G. A. Staunton of the Medical Department of the University of Denver, I was given the privileges of the dissecting-room, and with their assistance, dissected the necks of three cadavers, using the accessory and the hypoglossal as the base of operations. The result was the selection and use of the spinal accessory and descendens hypoglossi in the complete operation. It was first performed on the cadaver. The descendens hypoglossi, usually called a branch of the hypoglossal, arises from the first and second cervical nerves, and beneath the base of the skull joins the hypoglossal and accompanies it in the same sheath to the posterior belly of the digastric muscle where they part company. The descendens hypoglossi is distributed to the depressor muscles of the hyoid bone. Below the point of section, it forms a loop with communicating branches from the second and third cervical, which go to the above muscles. No perceptible paralysis of the muscles resulted.

Operation.—The patient was sent to St. Luke's Hospital, where, on Jan. 26, 1909, assisted by Drs. Childs and Staunton, I performed the operation now described. An incision was made through skin and fascia three inches long from just above the tip of the mastoid process down the neck in front of the sternomastoid muscle; then a crescentic incision from the upper angle of the wound beneath the lobe of the ear and terminating in front at the middle of the tragus (the Kocher incision). From this stage, the dissection was continued, chiefly, with the conical handle of a scalpel and blunt scissors. The posterior border of the parotid gland was gently elevated and pushed forward. The ear was pulled upward and working gradually downward and inward in the narrow space between the mastoid process and the ramus of the jaw, the facial nerve was exposed where it enters the gland. To identify it, it was traced to its first bifureation, in the gland, into the temporofacial and the cervicofacial branches. The upper or temporofacial seemed softer and more fragile than the larger or cervicofacial branch. The nerve was now traced and isolated to the stylomastoid foramen; and for convenience in the further progress of the operation, it was not now cut but a large silk loop put around it. The spinal accessory was now found and traced to its entrance into the fascia of the sternomastoid, which is about opposite the angle of the inferior maxilla on a straight line. A silk loop was put around it. The hypoglossal was next exposed. This nerve turns forward and crosses the occipital and external carotid arteries about the central tendon of the digastric muscle. It lies on the hyoglossus muscle and at this point the digastric was cut, posterior to the tendon, and the ends turned out of the way. The descendens leaves the hypoglossal at this point and goes down the neck on the great carotid sheath. A silk loop was put around it. With long, slender, probe-pointed scissors the facial was now severed at the stylomastoid foramen and the stump pulled outward. The accessory was now pulled upward by the silk thread, in order to estimate accurately the place of division, that no tension should exist after union; and for the same reason the patient's

13. Carson, Norman B.: Surgery of the Thorax and Spinal Column, Am. Pract. Surg., 1909, vi, 446.
14. Allen, A. R.: The Symptom-Complex of Transverse Lesion of the Spinal Cord and its Relation to Structural Changes Therein, Am. Jour. Med. Sc., May, 1908.
15. Holmes, Gordon: On the Relation Between Loss of Function and Structural Change in Focal Lesions of the Central Nervous System, with Special Reference to Secondary Degeneration Brain, 1908, iv, 514.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

head was turned, at this juncture, decidedly to the left. The nerve was severed just before its entrance into the sternomastoid muscle, and with the aid of my assistant in holding the ends of the nerves squarely together, I applied the finest linen stitch with a delicate round, curved needle at each side, including probably some of the nerve fibers, and tied them only moderately tight. A third stitch was applied on the under surface through the neurilemma only. The object of this stitch was chiefly to secure more certainly apposition of the nerve ends against tension. To prevent strangulation from excessive connective tissue proliferation, the sutured ends were enveloped in Cargile membrane. The descendens hypoglossi was severed fully three-quarters of an inch below the bifurcation of the hypoglossal, turned upward and stitched to the peripheral stump of the spinal accessory with the same technic as with the facial. The digastric muscle was reunited with chromicized gut. Not a single vessel was ligated. The original drawing (Fig. 2) made for me by Mr. Frederick Cavally of Denver, shows correctly the complete anastomosis of the nerves and their relation to the parotid gland and the sternomastoid muscle. The wound was wiped out gently with warm salt solution; the parotid was pressed gently down; the fascia united with a running stitch of No. 1 chromicized catgut, and the skin with subcuticular silkworm-gut. At the upper angle of the wound, the skin stitch was carried once completely through the skin and then continued around the ear as a subcuticular. This

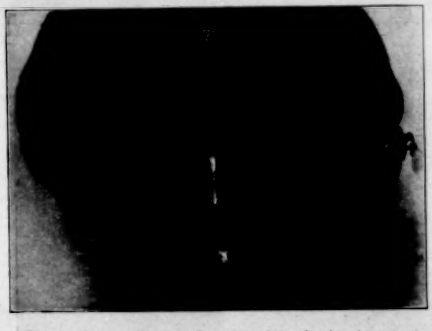


Fig. 1.—Skiagraph taken Jan. 12, 1909, showing lateral view of the head of W. B. with right side next the plate. Spectacles in situ. The arrow points to the shadow of a bullet lying in the middle fossa of the skull. The finger indicates the point of entrance of the bullet just in front of the tip of the mastoid process and also the shadows of numerous small pieces of lead which have been chipped off the bullet in its course through the petrous portion of the temporal bone.

technic, in an uneven or long wound, greatly facilitates the removal of the stitch by clipping the loop. The neck was dressed with sterile gauze and bandage. No fixed dressing was applied to head and neck, and the patient was instructed not to turn his head to the left, but if he should inadvertently do so, no harm would result as the nerves were given plenty of slack.

The last complete operation on the cadaver was done in half an hour. On the living subject, two and a half hours were consumed. The anesthetic (ether) was administered skilfully by Dr. Karl Roehrig, and there was neither nausea nor the slightest shock.

Postoperative History.—The patient's two weeks' stay in the hospital was uneventful. The stitch was removed on the tenth day. There was no infection and union was perfect throughout. In a week more, the patient left for home in good condition and cheerful in the promise of a good result. He was carefully instructed to use the constant, or galvanic, current five to ten minutes daily, with gentle massage to face, neck and shoulder. As soon as the muscles responded to the faradic current, it was substituted for the constant. This was not manifest until the expiration of three and one-half months. These important measures were not carried out properly and systematically the first two months, but were afterward. At the end of fifteen weeks, patient noticed feeble, associated movements of shoulder and face. At end of four months, he could voluntarily contract the muscles slightly at the corner of the mouth. I saw him at this time and observed it. A week later, I saw him again and it was distinctly noticeable, showing manifest improvement. Three months after the operation, he could depress and elevate the shoulder with ease, and at the same time could elevate the extended arm above the head, as shown in the photograph (Fig. 5), which, though taken five months after the operation, shows also a perfectly symmetrical face. There was slight atrophy of the muscle of the supraclavicular region, outer half. For two or three months after the operation, there was slight dull pain and a feeling of fatigue of the shoulder muscles after manual exercise, but no other inconvenience from section of the spinal accessory was manifest. In August, he built a sailboat, doing much of the manual labor himself, without pain or discomfort to the shoulder. On August 9, six months after the operation, he wrote me as follows: "In order to play the flute well, it is necessary to have quick and absolute control over the lips. On July the first, I could just make a note with considerable effort, but now I can play a piece through with few mistakes, though I have not absolute control over the instrument as I had before the paralysis occurred." This is conclusive testimony as to the rate and degree of improvement, and is verified by a letter from his father to the same effect. The patient also said that the coincident movement of shoulder and mouth first attracted his attention when he lifted, or pulled at an object, showing that the facial expression was an involuntary response to a forced voluntary movement of the shoulder at that time. He was in the habit of carrying the right shoulder lower, and had been frequently admonished about it when a student at the Western Military Academy. He was instructed when the photographs displaying the shoulders were taken to assume an easy natural position. Other photographs show the patient's ability to close the eye voluntarily at four months, and the power to contract, retract and balance the muscles of the mouth at five months. When the arm and shoulder were used suddenly and strongly, associated movements were marked from the fifth to the eighth months. After this it was more in harmony with his will and effort to control it. Three months after the operation, the lines of the incision were hardly noticeable at close range. I last saw the patient at the University Club, Chicago, in October, 1909, nine months after the operation. He looked well, was cheerful and happy. The bullet had given no trouble. He talked and smiled without observable paralysis, but when he laughed the disparity was very noticeable. The latter is the last defect and manifestation of weakness to disappear. The associated movements were less marked, and the muscles of neck and shoulders symmetrical. There was no discomfort or weakness in the functions of arm and shoulder, and no atrophy of the trapezius. The entire result was most gratifying.

Ballance expresses the opinion that "perfect symmetrical movements of the facial muscles from emotional stimuli can only be obtained by devoting the whole nerve, either spinal accessory or hypoglossal, to the cure of facial palsy."

Ballance and Stewart[1] say that "degeneration, after a nerve is divided, proceeds just as rapidly though it is immediately sutured to the proximal end; that the axis cylinders are destroyed in six or seven days; and that with the absorption of fats and myelin and the conversion of connective tissue into fibrous tissue, the peripheral nerve is, in six or seven weeks, a fibrous cord."

Regeneration is a slower process. It commences in two weeks after anastomosis, and is manifested in muscular reaction in about four months in facial palsy, but is not completed until a much later date.

Fatty degeneration of the muscles is also worthy of consideration. Though it follows degeneration of the

1. Ballance and Stewart: Healing of Nerves, Macmillan.

nerve, it also disappears coincidently with regeneration. As long as fatty degeneration exists, the muscles are not likely to respond to the faradic current.

It seems reasonable and natural to believe that, if a divided nerve is immediately reunited to a proximal nerve stem, degeneration of the peripheral end will not be so complete, and that, with regeneration beginning in two weeks, it ought to be completed earlier than is usual in the case of a nerve which has been, from injury or disease, in a state of degeneration for many months or years.

Ballance,[2] in reporting a case of facial palsy, expresses preference for the hypoglossal for the reason that the

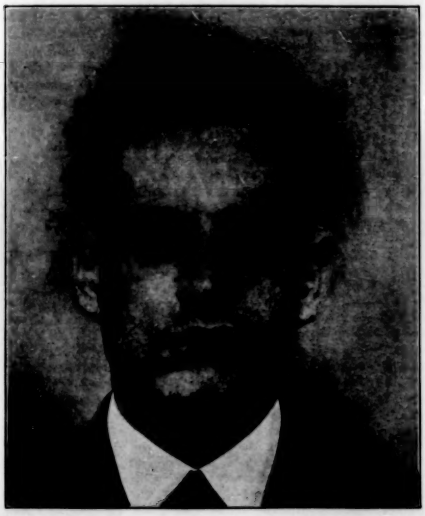


Fig. 3.—Patient, four months after operation: shows facial asymmetry, but improved since operation.

cortical centers of these nerves are in closer relation than is the spinal accessory to the facial. Practically, there seems no force to this preference, as in anastomosis with the spinal accessory, success is as prompt and certain as with the hypoglossal, while associated movements are equally common to both.

He has used the lingual nerve in anastomosis with the peripheral hypoglossal, but failed, and has abandoned it. The lingual is a sensory nerve, and failure, under these conditions, is not surprising. No convenient available nerve for anastomosis with the peripheral hypoglossal has been demonstrated in operations for facial palsy. In a severed nerve, degeneration of the proximal end is exceedingly limited while, in the peripheral, it is finally complete. Both Ballance and Stewart, the leaders of the new, or peripheral, school, oppose the neuron theory held by Waldeyer, Ranvier and others that regeneration proceeds necessarily downwards from the proximal side, the axis cylinders growing into the empty spaces and finding momentary rest and renewed life and energy in the nodes of Ranvier, the conclusion being that regeneration and the restoration of function is impossible unless direct connection is restored and maintained with the ganglion centers. J. B. Murphy,[3] in the best American monograph on the subject, states that complete repair will not occur without this connection. He and others also maintain that regeneration is impossible without a neurilemma. Ballance and Stewart assert that the neurilemma cells of the peripheral segment regenerate, even the axis cylinders, independently of the proximal end, or union with it, but that regeneration is not complete in function, etc., without such connection. With this concession, it is hardly necessary to emphasize the absolute dependence on anastomosis to the proximal side, for the complete regeneration of the nerves and the restoration of the functions of the muscles.

If peripheral axis cylinder processes do fuse together to form continuous paths, independently, as maintained by the new school, though incompletely, it is a point in favor of immediate, or early, anastomosis, for such inherent power of the peripheral neurilemma cells must, it seems, retard complete degeneration, and with the stimulus of the proximal ganglion centers restored, early and more certain regeneration ought to be assured, notwithstanding the statement that "the length of time the paralysis has existed bears no relation to the rapidity of the return of function." I hope, and am inclined to be-

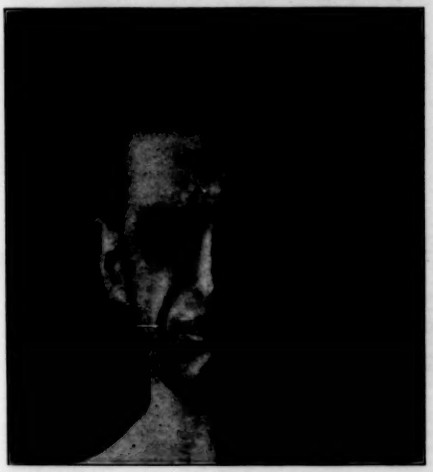


Fig. 4.—Patient, four and one-half months after operation, showing improvement and characteristic appearance of eye in facial paralysis.

lieve, that further experience will invalidate the closing statement above. This hope is further justified by the statement of Ballance and Stewart that "regeneration begins before degeneration is complete."

From the writings and experiments of Ballance and Stewart of London and Murphy of Chicago, and the references by them to continental writers, and the opinions expressed by distinguished American surgeons, I am enabled to formulate some probable conclusions of interest and value. The field is too new and the data

2. Lancet, London, June 12, 1909.

3. Murphy, J. B.: Surgery of Nerves.

yet too limited and incomplete to justify a dogmatic treatment of the subject.

"Nerve fibers are capable of maintaining their normal nutrition only when they are in uninterrupted connection with their trophic center, which controls the nutritive processes."[4] Also in reporting experiments on animals, Landois states that the degenerative process is arrested at each node of Ranvier, and that later fatty degeneration takes place simultaneously in the entire peripheral portion.

Langly and Anderson, quoted by Murphy, say that "regeneration is a downward growth." It is, too, in keeping with the Ritter-Valli law that the death of a nerve advances from center to periphery, and supports the Wallerian law that portions of fibers, separated from their trophic centers, degenerate. It is equally plausible that regeneration should proceed in the same way.

I believe the conclusion justifiable that the sooner a nerve is reunited after division or the destruction of its function by disease, the more certain, prompt and satisfactory will be the union and the restoration of function. In facial palsy, the spinal accessory is to be preferred, if for no other reason than the fact that the peripheral end can, without unusual difficulty, be stitched to the descendens hypoglossi, and with practically no additional dissection than is necessary in spinofacial anastomosis. The descendens is a little smaller than the spinal, but that is not an important objection. The spinal is a little smaller than the hypoglossal, but that is no disadvantage in facial anastomosis. Complete section of both nerves and end-to-end anastomosis are to be preferred. Splitting is objectionable, because axis cylinder end-to-end apposition is necessary to regeneration, and is uncertain in splitting. "Implantation of one end through a slit in another is unscientific."[3] Transverse division of half the diameter of a nerve and then splitting the proximal end for anastomosis with a peripheral nerve, end to end, may be justifiable in some cases as was done by Ballance in one case with the spinal and peripheral hypoglossal.

His statement that symmetrical and perfect facial expression is more certain with complete division of the nerves is worthy of the highest consideration. The best technic for exposure of the facial nerve is along the lines followed in the subject of this paper. It should not be approached through the body of the parotid gland, for that would needlessly endanger the integrity of the nerve which, soon after entering the gland on the under surface posteriorly, bifurcates and gives off other smaller but important branches. Besides, there would be the danger of annoying hemorrhage.

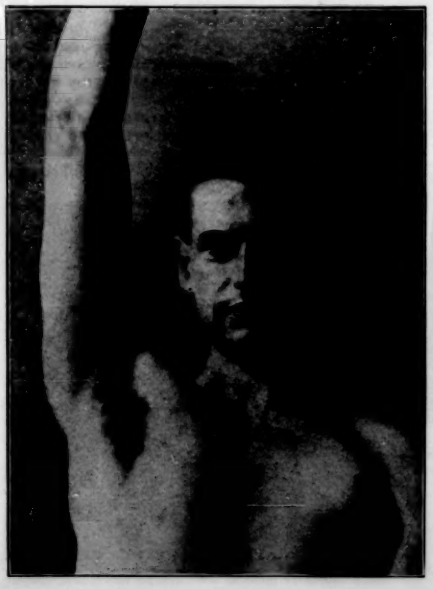


Fig. 5.—Patient, five months after operation. Arm and shoulder elevated with equal facility three months after operation. Note improvement in face and expression.

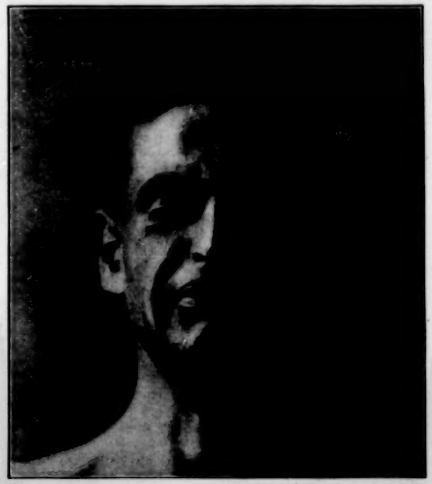


Fig. 6.—Patient, six and one-half months after the operation, showing voluntary action of facial muscles including eyes. Note deficient action of right corrugator supercilii.

There are many unusually interesting physiologic and pathologic problems involved in the surgery of the nerves, none more novel than that of associated movements from the anastomosis of one motor nerve to another serving different groups of muscles.

Why should movement of the shoulder muscles, in spinofacial anastomosis, produce simultaneous movement of the facial muscles? The nerve supplying the former is cut and diverted to the latter. Hereditary habit must be a potent influence. Will the cortical and ganglion centers reeducate the nerves and muscles in the performance of new duties? With the aid of the will and voluntary habit, it is probable.

In the anastomosis of nerves, it is necessary to make some provision against the encroachment of excessive connective tissue production. Egg and Cargile membrane

4. Landois: Physiology, Ed. 10, p. 635.

are recommended. Murphy has buried the ends in fascia or muscle. Cargile membrane is very thin and delicate, yet believed to be sufficiently resistant to meet the indications satisfactorily. "It is prepared from the peritoneal lining of the ox or other similar animal," by Johnson and Johnson. Nerve anastomosis is one of the most practical and beneficent of modern operations. No operation is more certain and successful in the absence of infection; with infection, none more certain to fail. In final results, it is one of the distinctive triumphs of recent surgery.

930 Pennsylvania Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. PRIMROSE AND GRANT

DR. JOHN T. BOTTOMLEY, Boston: The subject of surgery of compressive paraplegia is now in the developmental stage. No one man has had sufficient experience to give him a great deal of first-hand knowledge on the subject, so that any one who has had some experience in this line should contribute it for the benefit of all. It is only from a study of many cases that general laws can be made for future guidance in this particular field. We know that while certain cases, perhaps a great many, are not helped by operation, yet some few cases are helped in this way. We know, further, that previous to operation we cannot in many cases say which of them will be and which will not be helped by an operation. Here, then, is a field where exploratory laminectomy is often indicated. With careful technic the operation is not dangerous to life, and with careful handling of instruments and tissues the patient's condition will not be made any worse. Therefore, I plead for exploratory laminectomy in many of these cases.

One point Dr. Primrose did not touch on in the non-traumatic pathology of compressive paraplegia is the occasional presence beneath the dura of small collections of fluid well localized in thin-walled cysts. Some of these cases have an antecedent history of trauma, some have not. But an adult, usually of middle age, who has slowly progressing paralysis, usually of the lower limbs, with, perhaps, more or less paralysis of the upper limbs as well, and an indefinite, variable degree of sensory disturbance, will sometimes be found to have, if an exploratory laminectomy is done, such a collection of fluid beneath the dura. When this is removed, the patient in many instances recovers, but recovery, as a rule, is slow. Yet any gain in these particular cases is well worth the attempt.

DR. FRANK WARNER, Columbus, O.: Dr. Bottomley seems to think that any one who has had even a limited experience in this line of work should report his cases. I have had some experience in compression from Pott's disease, and I was very glad to hear Dr. Primrose recommend operation in such cases. We should not delay too long in trying over-suspension or any other treatment tending toward the relief of compression. It would be better to make an early laminectomy, and I have been very well satisfied with the results obtained in that class of cases.

Another class of cases, in which it seems to me well to operate, is the one Dr. Murphy mentioned—in vertebral fractures, in which the bone has penetrated the cord and in which we might think that possibly the cord has been crushed. Yet occasionally we find at the operation that it is only a spicule of bone that has entered the cord, or that a portion of the cord has been crushed, but by relieving the compression these patients recover. Anyway, these patients die without operation, and therefore it seems to me that we should give the patient the benefit of the doubt and operate.

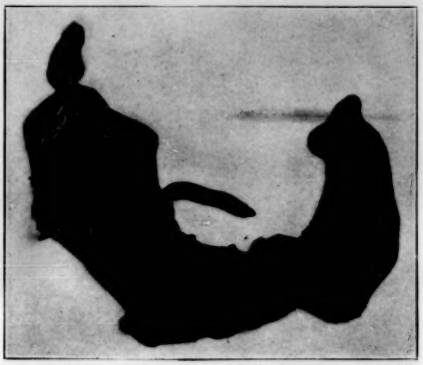
DR. A. PRIMROSE, Toronto, Can.: The speakers have apparently agreed with me. The discussion has emphasized the point brought out, that we should employ exploratory laminectomy when we are in doubt, and that was what I was particularly anxious to insist on in my paper.

DR. W. W. GRANT, Denver: I would like to emphasize the necessity of the use of the spinal accessory nerve in preference to the hypoglossal, for the reasons given. It has been claimed that one might use the trapezius branch of the spinal accessory only. That has been done in Europe in cases of primary facial paralysis. I do not believe, however, that it is a wise procedure, because the trapezius branch makes a wider gap between that and the facial, and it must be severed in the posterior rather than in the anterior triangle. I do not believe that the splitting operation is justifiable. The whole nerve, both proximal and peripheral, should be used in this anastomosis. I have taken pains to dissect this region before doing the operation, knowing the importance of preventing the paralysis that results from the operation as ordinarily performed. I regard paralysis of the tongue as being more serious than paralysis of the trapezius muscle. I would do this operation even if I could not use another motor nerve for the peripheral, as in this case.

INTESTINAL OBSTRUCTION, DUE TO ASCARIS LUMBRICOIDES, WITH AUTOPSY

CHARLES WHELAN, M.D.
Surgeon to St. Vincent and Hillman Hospitals
BIRMINGHAM, ALA.

The case report with its post-mortem findings demonstrates the fact that the roundworm is at least worthy of consideration as an etiologic factor in the production of bowel obstruction in children. The case should further demonstrate the fact that no cautious surgeon should ever pass unnoticed the statement of an anxious mother that "the baby has worms," in casting about for an explanation of the suspected trouble in certain obscure



Section of obstructed intestine after opening into lumen, showing worms.

abdominal cases occurring during childhood. Then perhaps fewer certificates would be issued in which the cause of death was attributed to "intestinal paralysis, superinduced by toxemia."

History.—On Aug. 4, 1910, I was called in consultation with Dr. Elwyn Ballard to see E. J. W., a male child, aged 5½ years. The following history was given me by the child's mother: From the date of its birth the child had been unusually strong, never having had even the diseases common to childhood, except measles, from which it promptly recovered. About April 1, 1910, however, according to the mother, the child became peevish, restless at night, had poor appetite, sallow complexion and complained frequently of stomach-ache. She said that there was always more or less "swelling in the

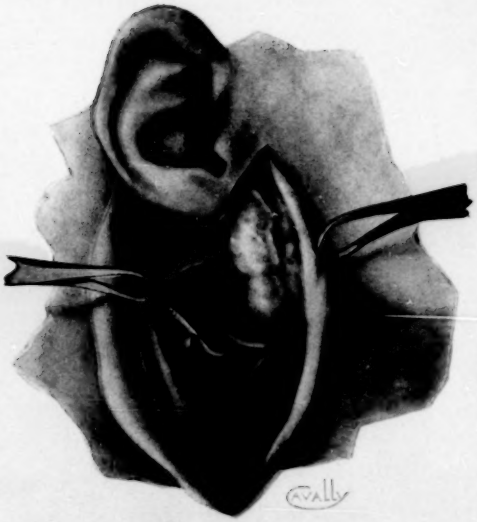


Fig. 2.—Spinofacial anastomosis, and peripherospinal to descendens hypoglossi; also showing hypoglossal where it turns forward and the descendens leaves it.

Illustrating Article by W. W. Grant, M.D.
The Journal of the American Medical Association.

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stomach," and she thought that "it was worms." During all this time the baby was obstinately constipated, but in no stool was a worm ever noted. On Aug. 2, 1910, about 11 p. m., the child awoke crying with pain in its stomach, and soon afterwards began to vomit. Castor oil was at once administered by the mother. The dose was repeated at noon on August 3. The vomiting continued and there were no bowel movements. On the morning of August 4 the child's abdomen appeared greatly distended, and accordingly the mother gave another dose of oil followed by an enema, with no result. Then it was that Dr. Ballard was called in. He found the child in convulsions, which, according to the mother, began about an hour previous to his arrival. The doctor found the abdomen greatly distended, vomiting was incessant, pulse rapid and extreme shock evident. At 11 p. m. on August 4 I saw the patient with Dr. Ballard. At 11:20 p. m. the child had a convulsive seizure and died. An autopsy was asked for by me and permission was obtained to explore only the abdominal cavity.

Autopsy.—The body was that of a reasonably well nourished, white, male child, apparently 3½ feet long, apparent weight about 40 pounds. Rigor mortis beginning. The body presented no malformations, and on its surface there were no marks of discoloration. The entire abdomen was greatly distended. On entering the peritoneal cavity through the median line a small quantity of a straw-colored fluid escaped from the incision, followed by an immediate outburst of distended intestines.

Stomach: This organ was greatly distended with gases. On opening into its interior a small quantity of a dirty brown liquid of fecal odor was present. Pylorus was open.

Duodenum: This was greatly distended with gases. No fecal contents were found on opening the bowel.

Jejunum: The upper portion was greatly distended, and on opening into its interior there was found a quantity of liquid fecal material. The lower 6½ inches of this portion of the bowel appeared to be obstructed with an impacted mass of some kind. To the touch the mass was firm. Inspection of this part of the intestine revealed a more or less collapsed condition, with varying circumferences along the continuity of the bowel. For the first 2 inches the circumference was larger than in any other portion of the obstructed bowel, then there was a constriction. About an inch further down there was a distinct "kink," then from this point on for 2 inches the bowel contained a mass. On opening the bowel, a "bunch" of roundworms was found, completely filling in the lumen or the first 2 inches. Two worms were found lying side by side in the direction of the long axis of the bowel through the constricted portion. The lower 2 inches of the bowel were also occluded by a "bunch" of worms similarly arranged to those found in the first 2 inches of the jejunum. This is well shown in the accompanying illustration.

Ileum: This portion of the intestinal canal was collapsed, and on opening into its interior no gases or fecal contents were noted. About 6 inches from its beginning the bowel presented a well-marked diverticulum.

Organotherapy in Scleroderma.—The *Annales de Dermatologie*, 1910, page 3383, contains a report of extensive work in this line by E. Roques at Toulouse. He tried extracts of various organs in treatment of scleroderma and found a decidedly favorable effect from thyroid treatment in 63.73 per cent. of 67 patients with diffuse scleroderma and in 70 per cent. of 10 patients with the circumscribed lesions. Thyroid treatment is not, he says, the specific in scleroderma which it has proved in myxedema, but the large proportion of improvements and cures justifies a trial of it. The best results were obtained with small doses given regularly for months and years and commenced early, while the tissues still resemble myxedema. Extracts of other glands demonstrated comparatively slight efficacy. The scleroderma may be due to various causes but a tentative course of thyroid treatment is certainly indicated as this may happen to hit the predominant factor in the individual case in question. The work of other clinicians in this line is also reviewed.

A SIMPLE AND EFFICIENT MEANS OF APPLYING ARTIFICIAL HEAT

STEPHEN E. TRACY, M.D.
Gynecologist to the Stetson Hospital
PHILADELPHIA

Following operation when the patient is relaxed, the temperature subnormal, and the functional activity of the organs diminished, it is an essential that reaction should be brought about promptly and every means which will promote this result should be employed.

This relaxed abnormal condition of the patient is best overcome by the application of external heat, which is the

Fig. 1.—Asbestos cradle containing incandescent electric lamps for applying heat to patients in shock, post-operative depression or collapse, or for producing diaphoresis.

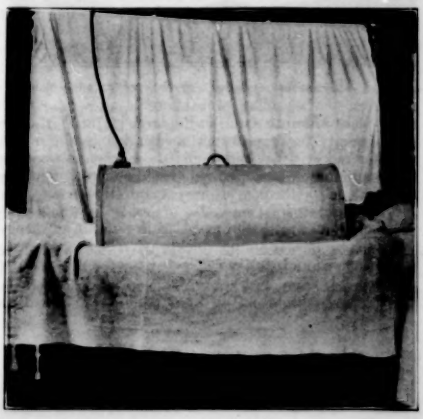

Fig. 2.—Apparatus in position over patient and connected with electric light circuit.

greatest of all stimulants at this time. Artificial heat is usually applied by placing several hot-water bags about the patient, which is quite sufficient when there is no shock and the temperature is normal. A very small portion, usually the edge of the hot-water bag, comes in contact with the patient, and as a rule the water in the bags is only warm, as the nurses will not use hot water for fear of burning the patient, which means expulsion from most training schools.

In cases in which the patient is weak, advanced in years, or in a septic condition, or in which the operation

has been prolonged, or much blood has been lost, or for other reasons there is considerable shock, we have found that the most simple and efficient means of supplying artificial heat is by electricity.

For this purpose we use a frame covered with asbestos, supplied with six or eight 16-candle-power electric lamps, which extends from the shoulders to the feet of the patient. When the patient is returned from the operating room she is wrapped in a blanket, the apparatus is placed over the body, the ends covered with blankets to retain the heat and the light turned on. In a few minutes the surface of the body is warm, reaction

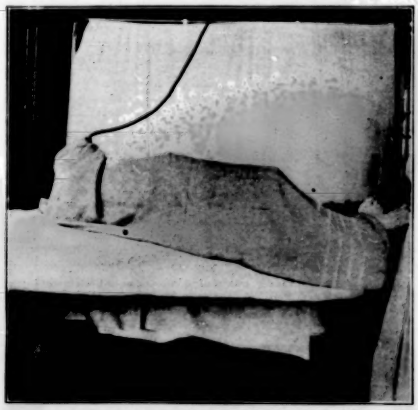

Fig. 3.—Method of retaining heat by covering with blanket.

takes place promptly, and, in the large majority of cases, the necessity for hypodermic medication is eliminated.

After ten or fifteen minutes it is usually necessary to turn out one or more lamps, as the amount of heat is excessive and will cause profuse perspiration.

The apparatus is used also in cases in which it is desirable to keep the skin moist, as in renal insufficiency.

The appliance is simple, inexpensive, light and easily moved about, and can be connected to any electric lamp fixture.

1429 Spruce Street.

A CASE OF FOREIGN-BODY CALCULUS

I. S. HIRSCH, M.D.
Pediatrist to the Jewish Maternity Hospital
NEW YORK CITY

History.—F. D., girl, aged 5 years, was brought to the children's clinic of the Beth Israel Hospital with the following history: Except for an attack of measles at the age of 2, she had been in good health until seven months ago, when she seemed to have lost control of the bladder function. The incontinence was present both day and night. During the last two months the urination has been extremely painful, the pain being more severe toward the end of the act and being referred to the vulva. There has never been any pains in the loins, nor has there been hematuria. During the past six months the child has been examined in several dispensaries and has been treated for enuresis, cystitis and vaginitis.

Examination.—General physical examination showed an apparently normal, though pale and under-sized child. Local examination disclosed a reddened and congested vulva, but no vaginal discharge. The mouth of the uretha was edematous and pouting. Bimanual rectal examination showed a movable mass about the size of a walnut, apparently in the bladder.

Urine: The urine was clear, of an amber color, had a faint acid reaction and a specific gravity of 1025. Albumin and casts were absent. A moderate number of red and white cells and a few crystals of calcium oxalate were present.

Bladder Examination: A sound was inserted into the bladder and the distinct grating sensation characteristic of stone was obtained. A radiograph of the pelvis revealed a large stone within the bladder. In the center of the stone a shadow of a rod-like piece of metal was apparent.

Treatment.—The child was referred to the Beth Israel Hospital and was operated on by Dr. L. J. Ladinsky, who removed, by suprapubic cystotomy, a stone weighing 5.5 grams. The recovery was uneventful. On section a pin was found within the center of the calculus. Chemical analysis showed the stone to consist of calcium phosphate, with magnesium phospate and calcium oxalate. The crust, which had a brownish appearance, was entirely phosphatic.

Since it would be entering into too large a domain to undertake even a brief consideration of the subject of foreign bodies in the female bladder, only a few points, such as have a direct bearing on this case, will receive consideration.

MANNER OF INTRODUCTION OF THE FOREIGN BODY

It is almost impossible to give a positive answer to the question of how in this case the pin reached the bladder. Although the vast majority of the foreign bodies found in the female bladder are introduced during masturbation, and though it is generally recognized that this vicious practice is prevalent among girls far below the age of puberty, it is nevertheless difficult to conceive that even a child would employ a sharp object like a pin for

Fig. 1.—Radiograph showing calculus in bladder. Pin discernible as dark line through shadow of stone.

the purpose. The bodies usually utilized for these practices are smooth, dull and rounded.

Foreign bodies have been accidentally introduced by attendants while dressing children. Such an occurrence may be safely ruled out in this case, because of the insistence of the mother that only safety pins were ever used in the child's clothing. Malicious introduction is to be considered as an explanation of the way in which such foreign bodies reach the bladders of young children, the malicious practice being similar to that which finds its expression in the "point-tying" practice of male children.

There is another way in which foreign bodies may reach the bladder, namely, by perforation through the intestine. Authentic cases have been recorded in which sharp objects entered the bladder in this way. Chopart, for instance, records several post-mortem examinations in which a fistulous opening was found through which a foreign body had passed from the intestine into the bladder. Van der Viel reported the case of a boy of 8 years who swallowed a pin, and after several years of suffering with difficult and painful urination, the pin, encrusted with calcareous matter, was extracted from the bladder. Austin reported the case of a boy of 14 years who suddenly developed the symptoms of cystitis which persisted for a year despite treatment. The diagnosis of a foreign body in the bladder was made and a long pin, the shaft of which was covered by a calcareous deposit, was extracted. The patient then recalled the swallowing of this pin about a year before the bladder symptoms appeared.

In these and similar cases it is impossible, without a demonstration of such a pathologic condition as would permit the entry of a foreign body from the intestine into the bladder, to state with certainty that this actually occurred. The story of the affected individual cannot be depended on, while the motive for withholding the true history is apparent. Still it is important to remember that this method of entry is a confirmed possibility.

Fig. 2. Radiograph of calculus showing smaller formation over point.

Fig. 3. Photograph of calculus showing pin *in situ* and granular condition of brownish surface.

ENCRUSTATION

There is one pathologic process of considerable interest in the history of foreign bodies in the bladder, namely, encrustation. A variable period after the entry of the foreign body successive layers of urinary salts may be deposited on it, resulting in the formation of a calcareous structure which gives a train of symptoms identical with that given by ordinary calculi.

Ebstein divides calculi into two classes, primary and secondary, basing the classification on the conditions of the urine. If the formation and development takes place in undecomposed urine the calculus is classed as primary, while a calculus which is formed from the ammonium urate, triple and earthy phosphates precipitated by the ammonia formed during alkaline fermentation, is a secondary formation. The great majority of foreign body calculi belong to the latter class. In our case the cystitis was accompanied by a slightly acid urine, and the encrustation consisted of substances found in such urine.

Calculi do not consist merely of amorphous or crystalline deposits alone. Ebstein has shown that an organic framework is essential. Schéde has proved experimentally that crystallization takes place through the agency of the colloids of the urine which act as a matrix for the crystalline deposit.

The crystalline deposits formed through the agency of the colloids of normal urine are reversible precipitates because they may be redissolved by simple chemical means. Normal urine contains no colloid which is not thus capable of being redissolved after precipitation. Fibrinogen, however, such as is produced by inflammation, is just such an insoluble and irreversible colloid as will furnish a stroma suitable for the formation of permanent crystalline deposits or calculi. A foreign body in the bladder becomes encrusted, therefore, only as a result of the inflammatory process it initiates, and the nature of the crystalline deposit depends to a great extent on the reaction of the urine associated with the cystitis. This theory regarding the pathogenesis of urinary calculi explains the variability in the rapidity of the production of a calcareous deposit about foreign bodies. In some cases encrustation will appear in 48 hours, while in other cases it will not occur for months or years. It depends to a great degree on the extent and severity of inflammatory reaction. The inflammation in turn depends on the nature and condition of the foreign object, and the condition of the bladder prior to the entry of the substance.

Sooner or later after the entry of the foreign body a cystitis is set up, and when sufficient colloid has been produced to serve as a stroma for the urinary crystalloids, these are deposited in successive layers on the foreign object. The shape of the resulting calculus is considerably influenced by that of the foreign nucleus.

Such calculi may be spherical, ovoid, fusiform or irregular. Once begun the process proceeds very rapidly, and these concretions may grow to considerable size in a short time. Encrustation usually begins in the center of the foreign body, the ends remaining free, and if the object is long and slender, like a needle, a fusiform calculus is thus formed. Frequently the ends of the object remain entirely free. This may be due to the constant contraction of the bladder walls, for objects which are long and rigid usually lie transversely with their extremities against the walls of the organ. The resultant friction prevents the accumulation of deposits. When one end of the foreign body is pointed it may become imbedded in the bladder wall, and then the free end alone becomes encrusted. Exemption of the end from encrustation may also be due to its position, *e. g.*, in the urethral orifice. After sufficient deposition has taken place in the middle of the object so that the ends become less mobile, one or the other end may also become encrusted, forming a double calculus similar to our specimen.

DIAGNOSIS

In this case the symptoms were suggestive of enuresis, and for this condition the child was treated elsewhere. A rectal examination, which probably had not been previously made, but which is an important and essential procedure in the determination of the true significance of the urinary symptoms, disclosed a probable tangible cause for the symptoms. The distinct grating sensation elicited by the sound rendered the diagnosis of stone in the bladder most probable. The radiograph furnished conclusive evidence on this point. From the bimanual examination and the sounding alone it was evident that the calculus was of large size. This, taken in conjunction with the absence of a story of renal affection and the brevity of the period of suffering, made it probable, even before the radiograph disclosed the actual condition, that a foreign body was the nucleus for the calculus.

56 East Ninety-Third Street.

THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM *

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The increased interest in the pathology and treatment, including operative procedures, of the nasal-septum since 1902 seems to justify a review of the subject in order that erroneous conceptions then held can be righted, that the best advice for the patient's welfare can be given, and that the best operative procedures with fewest post-operative drawbacks, dangers and discomforts, can be promulgated. It is time, too, that absolutely impartial judgment be passed as to what is best and what is not best for the future of nasal surgery. Every operator, in the light of extended experience, has corrected faulty impressions and certain operative steps that have not stood the test of time.

Fig. 1.—Showing position of instruments within easy reach of the operator.

EVOLUTION OF THE RESECTION METHOD

It was formerly the custom to place a saw either above or below a spur or acute bend in the cartilaginous or bony septum, and cut it off, sacrificing the mucoperichondrium and leaving a bare surface. This was followed by annoying scabbing, a dry condition of the nose, slow healing and a production of granulating tissue. Often the saw left a permanent perforation, and in few instances did free nasal breathing result. Only in very selected cases have any of the special methods named for the men who originated them proved of lasting benefit.

In talking to other rhinologists it was learned that the Asch procedure was disappointing both to the patient and operator, in that pain during convalescence was excruciating and stenosis unrelieved. This has also been my experience. Before the day of submucous resection, no doubt all of us tried the method of elevating the mucous membrane over a ridge or spur, followed by either sawing off the projection or cutting it away with a gouge. In common with the other methods, this nearly always failed to establish a patulous nostril.

These measures succeeding in few cases, and then in special and rare deformities, investigators began the search for a method that could be applied to any character of deviation or deformity. Like the locomotive, the submucous resection is not the acme of a single conception. Many have worked at it and each has added his mite.

IS THE DEVIATED OR DEFORMED SEPTUM INJURIOUS TO EYES, EARS OR THROAT?

At first thought it might seem extravagant to venture the statement that a bent septum could have any deleterious effect on the eyes, but clinical experience forces us to the conclusion that it has. Patients of my own are recalled who were able to lay aside glasses that had been worn for years, after the remedying of a septal deformity, with complete relief. Asthenopia, and supra-orbital, unilateral, as well as general headaches, have been permanently relieved, apparently, by removing pressure contact of septum and turbinates or by straightening the septum. Stubborn cases of headache and eye pains that have resisted the usual ophthalmologic treatment have thus been explained, and the diagnosis later has been verified by correcting the pathologic condition in the upper anterior part of the nose.

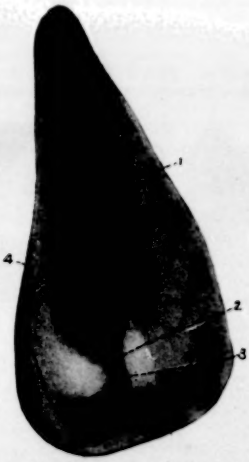

Fig. 5.—View of interior nose. Dotted lines show the direction and extent of the initial incision. Acute angle of flap shows on floor of nose. The incision allows ample room to elevate around the obstruction. 1. The middle turbinate. 2. The inferior turbinate. 3. Overriding cartilage. 4. Septum.

The influence of nasal obstruction in causing deafness and inflammatory and suppurative processes in the ear is generally recognized. The narrowing of the nasal passages prevents ventilation and causes congestion and stasis of the turbinates, which reduces the hearing by interfering with the tympanic circulation. This can be

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

demonstrated both from anatomic and clinical experience, and proper treatment of the nasal obstruction is usually followed by satisfactory hearing results.

It would seem that too little has been written on the influence of nasal insufficiency in relation to throat and larynx irritation. The origin of a large number of cases of chronic laryngitis can be traced to a nasal stenosis or disease in the nasal chambers. Following this enforced mouth breathing there is a lack of filtration, proper moisture is not maintained, and suitable temperature not established of the air supplied to the lungs. The arch enemy of free nasal ventilation—the deformed nasal septum—is thus indirectly responsible for much cough.

Fig. 2.—Author's forceps for removing the bony septum after the perpendicular plate has been cut through. A small pin in the lower blade fits into an opening of the upper, thus preventing the overriding of one blade. These forceps are small enough to be watched while in the nostril.

DO WE FEAR INFECTION TOO LITTLE?

Infection following surgery of the septum, turbinates or sinuses is such a rare occurrence that there is a disposition to fail to keep in mind its possibility. Infection of a mild type, no doubt, occurs in most cases. Streptococcic infection with fatal result has been reported. From the literature at hand, erysipelas infection has not been encountered. Therefore, the following case in my own practice would seem worth recording:

History.—Nov. 16, 1907, Mr. G., aged 37, farmer, complained of fulness in ears, tinnitus aurium and deafness. He had had trouble for some time but for the last few weeks had been worse with sense of fullness increasing. He was a mouth breather especially at night, and on the slightest exertion.

Examination.—Both drums were slightly atrophic and retracted. Hearing for watch was by contact; hearing for conversation was by approaching the patient, and speaking in a very loud tone. Tuning fork bone conduction was lengthened. Both inferior turbinates were enlarged and impinged on the nasal floor. An oblique bend and thickened maxillary crest extended in the direction of the sphenoid sinus pressing against the middle turbinate on the right side.

Treatment.—The lower portions of both inferior turbinates were resected. This procedure gave fair breathing capacity, and with cauterization relieved the tinnitus and fullness.

Subsequent History.—The patient returned in January saying there was still some stopping up of the right nostril. It was decided to remove the crest to its posterior limits by resecting the nasal septum.

Second Operation.—The operation was done Jan. 19, 1908. A vertical incision anterior to the obstruction—flap seemed unnecessary in this case—was made and the bony obstruction was fully removed. Packing was removed in 16 hours when it was found that the wound had closed by first intention. In 30 hours after the operation the patient began to have fever, headache, nausea, pain in the nose and face, general malaise, and swelling of face and neck extending down on the body, especially the glands of the neck being involved. As there had been influenza in his family he therefore accordingly diagnosed his affliction as "grip."

Source of Infection.—Ten days previously Mrs. B. had been operated on in the office for a chronic frontal sinus suppuration by the intranasal route. Erysipelas developed, Jan. 22. The before-mentioned septum, no doubt, was infected from this case, though all instruments and hands were, as we thought, thoroughly disinfected. It is interesting to note that the new wound developed erysipelas 2 days before a diagnosis in the sinus case was made. The true nature of this septal infection remained obscure until the frontal sinus wound showed erysipelas.

The infection of the septum ran its course leaving a perforation the size of a pea two-thirds of the way back on the bony septum near the floor. This has caused no trouble whatsoever and the patient is utterly ignorant of its presence.

Too much stress cannot be laid on asepsis in all particulars on part of operator and assistants, though it is not wise to attempt to disinfect the nasal chambers of the patient where all scrubbing and douching are worse than useless. The fact that the septum can be resected without infection in the presence of a suppurating sinus disease shows this structure to be practically immune to pyogenic organisms.

DOES RESECTION AS NOW PRACTICED LEAVE ANYTHING TO BE DESIRED?

It would seem from the favorable reports of the investigators and workers in the field of septal surgery and from the enthusiasm aroused and maintained since the appearance of Freer's first article that in the majority of cases the method is almost ideal. Yet there remain several questions to be settled by the court of last resort—further experience and verification.

To operate on a patient in whom there is a suspicion of a constitutional taint is to invite danger and defeat. To operate on children yet in the formative period of life is a question not fully settled. Operators of wide experience argue for and against. I would not hesitate to operate on a child of 7 or over in whom there was an extreme deviation with nasal insufficiency, believing it safer to do so than to permit the little patient to suffer the inconvenience of mouth breathing and dangers of lack of facial development. To operate on patients of

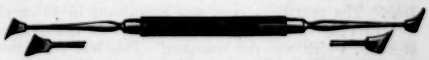

Fig. 3.—Author's cartilage knife and hoe elevator. With this knife the primary incision through the mucous membrane—both vertical and horizontal—and cartilage may be made. It is also useful to begin the elevation on the opposite side through the cartilage cut. The whole cartilage may be removed under direct guidance of the eye with it. It aids greatly in the elevation of the flap.

Fig. 4.—Author's double chiselled elevator for elevating the flap. It is useful for working down in the acute angle on the floor of the nose, and around acute bends especially of the crista.

advanced age or those without the capacity to overcome the inconvenience of a somewhat long and tedious procedure is also questionable.

There is little liability of a permanent perforation of the septum if the submucous resection is carefully carried out by an experienced, painstaking operator. It is an operation applicable to any kind of deformity.

From my experience it would seem that the initial incision is the key to the successful termination. The crust formation following all the incisions, so far proposed in many cases, is objectionable. This is a point

which all the workers, it is hoped, will endeavor to improve and perfect.

THE DECISION TO OPERATE

It is a well-known and recognized fact that not all deformed septa need surgical intervention; insufficient breathing capacity is the indication. This is determined by stopping up one naris without interfering with the normal relation of the alæ.

If sufficient air to supply the lungs for five minutes with lips closed without inconvenience to the patient is obtained the other naris is tested in the same way. This is the ideal nose, and one that will scarcely need be seen by a rhinologist. Of course, there are noses with difference in breathing capacity of the two chambers that do not require surgical treatment.

Before the day of our present method of operating much criticism was heard of nasal surgery and we had to admit its inefficiency. We have gone the gamut of crushing, cauterizing and sawing. But this is a period of evolution, and lucky is the man who can so plan and execute the condition of his environment as to escape criticism. Before accepting the responsibility of deciding that an operation should be done, let us take an inventory of present and past methods and their possibilities and see if we merit some of the criticism. Can we always say it is a trivial affair, free from danger and complications? Is it best and wise to inform the patient of a possible perforation even in the most experienced and skilled hands? Suppose a perforation occurs, with or without this advice, what of the legal aspect? Would the doctor be liable or has our experience been extensive enough to establish the impossibility of avoiding perforations?

COMPARATIVE STUDY OF NEGRO SEPTA

In a personal examination of 563 negroes in Paducah, of all ages, I have found the extreme deflected septum in not a single case. The work of the adult negroes was that of barbers, porters, roustabouts and the great army of loafers that frequent the dives. True, I did not find in every case a perfect plane, or absolutely vertical septum. The maxillary crest was prominent in 15 cases, but in only one case was it sufficient to cause nasal stenosis, which was not constant. This was associated with a vertical bend of the cartilage well up in the vestibule, and was found in a half-blood who had many American facial characteristics. Heredity, no doubt, is the most logical explanation of this case. One child, an octoroon, was found with adenoids, 18 had atrophic rhinitis, but altogether it was a fine lot of septa and nares free from disease.

One negro came to me in the early part of 1909 saying he could not get air through one nostril and giving a history of a blow on the nose several years before. Examination showed a bend in the perpendicular plate and quadrangular cartilage.

A SUMMARY OF ONE HUNDRED AND TWENTY-SIX CASES: ALL PRIVATE, ONE PERFORATION ONLY

In not a single case was it found that there was only a cartilaginous bend[1]. Bony deformity was associated in all cases and therefore required rather extensive work. One patient was operated on twice as the removal of the cartilage did not result in full nasal patency. This was one of my very early cases. In no instance was there a change in the nasal profile. This seems to be entirely preventable and its occurrence is inexcusable. There was one case, previously referred to, of infection from erysipelas which resulted in a permanent perforation the size of a pea—the only instance. In one case there was a circular absence of cartilage the size of a dime. This was attributed to ulceration from picking which the patient admitted doing. At time of operation there was no evidence of ulceration and no perforation was made, though for a few moments the condition was puzzling. Cocain and adrenalin had no effect on the bleeding in one case.

A large percentage—forty-seven patients, had previously had some other procedure—saw, turbinectomy, cautery, and Asch operation to give nasal respiration. One of these had a transcontinental experience of 12 attacks of these measures, including the Asch operation, with only temporary improvement. The submucous resection gave ample breathing room with no perforation. Seventeen operations were done to relieve hay fever when there was pressure contact of septum and turbinates, and so far relief has been complete, with the exception of one patient who was much improved.

THE INCISION THROUGH THE MUCOUS MEMBRANE

Whatever may be said or written of this operation, it would seem that the fulcrum of ultimate success is the primary incision. Objections to the Hajek incision are that it does not give access to the deeper parts and the elevation is difficult on the anterior free border; to the Killian operation the objections are the danger of a permanent perforation when the cartilage is cut through, limited room for instrumentation, and a tendency to scab formation. Of the incisions thus far described that of Freer is best planned. While ordinarily this gives ample operative interference, yet, in my experience, it is followed by rather extensive and prolonged scab formation. To overcome the inclination to scab formation and the tendency to retraction on healing of the flap, and in order to expose the crest more completely, I have used for the last year the following incision with ideal results (Fig. 5): Beginning well up on the septum with the ala nasi lifted, a vertical incision is carried down to and about half across the nasal floor. This incision has to be made, or at least finished, with an angular knife. From the lower end of this, a slightly curved incision in a horizontal direction is brought forward more in the cutaneous than in the muco-cutaneous structure (Fig. 5). This acute angle flap when elevated gives easy access to the crista. Two sutures are inserted in the vertical cut and if need be one in the horizontal. The two sutures prevent retraction of the flap in healing. Should the apex retract, the squamous epithelium is on the floor of the nose and therefore no scabs will form. The horizontal incision will not form crusts or scabs because it is in the skin. The incision is preceded by a few drops of cocain and adrenalin hypodermically.

In order to insure light for the operation, an extra rheostat and headlight should be in position; a storage battery is also in readiness. A fire in the neighborhood of the building or one destroying the current cannot then delay the operation, as happened to me before these precautions were taken.

THE PACKING

A piece of surgeon's gauze cut the proper size for the case in hand and coated on one side with suitable ointment, is then placed with this side next to the septum

1. Since reading this paper, I have had one case in which removal of the cartilage was sufficient for perfect breathing.

and smoothed out. "Strips of absorbent lint are then placed in, beginning on the floor" (Freer).

As soon as one strip is in and while patient is in the recumbent position liquid petrolatum is dropped in and continued after each piece, more petrolatum being used as the packing is built up.

It is the rule not to have a drop of bleeding following the removal of the packing in 20 hours. The piece of gauze may remain 2 or 3 days and does not interfere with breathing. This ointment does not melt at the temperature of the body and there is no displacement of flaps on removal of packing.

DEDUCTIONS FROM PERSONAL EXPERIENCE AND FROM THAT OF OTHERS

If it were possible for one to be liberal, and yet maintain that there is but one way to remedy septal deformities, radically through some form of mucous membrane incision, I should like to take this position. It is recognized, too, that to do good work one must have well-directed enthusiasm. It would seem from my experience —none of my 126 being clinic cases—that the operation is peculiarly fitted for private patients, all of whom are very grateful for the relief it brings.

Free access to the nose is essential. Therefore, the character of the incision is highly important, for here is the focus of success. At least two sutures are necessary (Fig. 5). No fear need be entertained of the sinking in of the bridge of the nose if the operation is well planned and executed. Perforation, with the flap method followed by suturing, need not occur, for it is hardly possible that two perforations opposite each other will happen. Should it happen, suture.

Spare the turbinates, cauterize little, and meddle seldom with the nose after the operation. A nose with stenosis, like a plugged-up pipe, has to be opened from end to end, therefore, to secure full breathing capacity sometimes requires extensive resection which uses up all one's attention, energy and judgment.

Fraternity Building.

THE RESULTS OF THE OPERATION OF SUBMUCOUS RESECTION OF THE SEPTUM IN PRIVATE PRACTICE*

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In order that we may reach definite conclusions in regard to the value of the submucous resection of the septum, it is necessary that we should know what indications, in the operator's opinion, justify its performance. These can be classified under two heads: first, the mechanical indications that lead to the selection of a particular operation in order that we may remove undue redunancy, correct displacement and overcome the resiliency of the septum; this division will not be discussed, as it is understood that all cases in this series were corrected by means of the window resection method; and second, the clinical indicatjons.

It is obvious that not every deflected septum is necessarily pathologic, for we must bear in mind that the patient does not consult us for the deflection itself, but for conditions that have resulted from the unequal ingress of air, which has produced hypertrophies, contact, insufficient drainage or active infection of the functional tissues of the nasopharynx or the accessory sinuses. If this position is accepted, resection alone is seldom indicated, and, on the other hand, no operation which does not remedy the associated complications will relieve the patient. Statistics in regard to the success of the operation, gathered two, three or four years afterward and based on the judgment of the patient, presupposes that during this time there has been a normal function of the nasopharynx, for any deviation therefrom will, in his mind, be an incomplete result. When we consider the physiologic activity of the nasopharynx, its innumerable reflexes, its secretory activity, and its intimate relation with so many other highly specialized organs of the body, this is a severe test. For this reason, any results claimed for or against the operation must be based on the individual equation; that is, must depend on whether or not the particular operator not only has appreciated fully the mechanical details of the procedure, but also recognized and remedied the associated lesions which have resulted.

The genius of Killian, Jansen, Freer, Ballinger, Hajek and numerous other writers, who perfected the technic, and furnished explicit directions for each step, leaves no excuse for failure in our mechanical work on the septum, but the functional restoration of resulting abnormal conditions must be based on a study of each individual case. With a perfectly straight septum, the patient may be no better off than he was at first, while the partial or complete removal of a cystic second turbinate, whose function has been destroyed, may preclude the necessity of correcting its original cause. Again, many compensatory hypertrophies, particularly of the posterior ends of the turbinates, will disappear after being relieved of their over-activity by correcting the septum and equalizing the air current. Any indication for operation, therefore, must take into consideration the present functional activity of the mucous membrane, the glandular elements and the questions whether there is obstruction to the drainage of the accessory sinuses, or whether there are points of contact that interfere with breathing, over-stimulate by irritation the active tissues of the nose, or cause compensatory hypertrophies.

The fact that the center of development of the septum is situated so far forward in an area usually included in the operative field, has prevented me from advising any extensive resection in children under the age of twelve.

In the following series of cases the Killian incision was employed, and in no case was it sufficiently anterior to run the risk of a dropped nose. In my experience, more depends on ample space between the middle turbinal and the cushion of the septum for freedom in breathing than on a perfectly equal intake of air anteriorly. If, therefore, the deflected portion of the septum is straightened, so that there is not a recurrence of the compensatory hypertrophy of the anterior end of the middle turbinate after being once corrected, the functional results will be just as good as though we were able to make the anterior nares of equal diameter.

I did not believe in sacrificing the entire middle turbinal, but drained one or more cells or removed the anterior third as indicated. The inferior turbinate, also, was trimmed on its lower border, but not removed. The openings of the various sinuses were carefully explored, particularly that of the nasofrontal duct, to see that drainage was ample. Any pronounced difficulty in respiration was generally found to have some abnormal

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

conditions within the "vicious circle of Ballenger." In any case with a history of attacks of vasomotor rhinitis, particular attention was paid to freeing the tissue under the cushion of the septum, together with a careful search for points of contact or pus irritation from a diseased sinus. Following the observations of Schadle, an overflow from the antrum was looked for particularly, but was not found as an exciting cause more often than a discharge of pus from the frontal sinus or ethmoid cells.

In this series of cases any deflection involving the lower half of the septum which needed surgical interference always included not only the triangular cartilage, but the maxillary ridge. Whatever freedom of breathing is obtained by resection can always be measured by the approximation to a central perpendicular line of the point of suspension and the base line of the new partition. It never bears any relation to the amount of tissue removed, for the intervening space is later filled with a fibrous exudate that will reproduce the old conditions, unless the two plane surfaces are approximated by throwing in of the base and suspension lines. In no case observed has there been a reproduction of cartilage or bone in the new septum.

Although a large percentage of the operations were performed under local anesthesia, that method, except in selected cases, is not recommended. The element of shock is of considerable importance and can be eliminated by general anesthesia and the operative time thereby materially shortened. Although physical pain can be eliminated by the use of local anesthesia, I believe that so-called cases of cocain intoxication are largely due to fright and should be considered in our selection of operative methods. One patient, a man of middle life, lay down five times, bathed in a clammy perspiration, with a slow and feeble pulse, simply from seeing the various instruments before any cocain had been used.

None of the patients developed sepsis or any alarming symptoms. The greatest discomfort was from pressure where the retention splints were too tight. In most of the early cases packing was done on one side; in the late ones, on both. Gauze splints covered with Cargile membrane were left in place forty-eight hours. In the early cases sutures were employed and then discarded, although more cases of primary union seem to follow their use. If the anterior end of the middle turbinate was removed, only the lower half of the vestibule was packed on that side.

In the series of sixty-two cases, from which the following data are drawn, thirty-six patients were males and twenty-six were females. Nineteen patients were operated on the right and twenty-five on the left side. The records in the other cases do not state which side was involved, or were sigmoid. Eight operations were performed under general and the remainder under local anesthesia. Letters were sent to the sixty-two patients and the deductions are based on the opinion of the patients as to their present condition and not on a reexamination. The replies also include the early operations, before experience had taught valuable lessons. On the other hand, more recent cases, in which the time limit has been too short for definite conclusions to be reached, have been omitted. Of these sixty-two letters, six were returned, the addresses not having been found, and eleven patients failed to reply, leaving forty-five answers for analysis. The circular questions and the answers were as follows:

1. Is the nasal breathing free? All but two of the forty-five had free nasal breathing.

2. What trouble have you had since the operation? Thirty-nine out of forty-five had none since the operation; two had nosebleed twice, and four still have some catarrh.

3. How much have you been relieved? Forty-three stated that they were greatly or completely relieved, one only partially relieved and the other not at all.

4. What ill effects, if any, have followed the operation? Forty-three had no ill effects; one reported a great deal of nervous reaction, and one had some scabbing from an anterior perforation.

5. What effect has it had on your general health? In one case the effect was unfavorable; in five there was no effect, and thirty-nine patients were improved.

6. What effect has it had on your hearing? The hearing of one patient had entirely returned; fifteen had improved, and the rest of the patients either had no impairment of hearing or the hearing was unchanged.

It is noteworthy that, in so extensive a surgical procedure in a region functionally active, no patient complained of any undesirable sequelæ, except in the one case of perforation. Only one stated that his condition had not been improved markedly. In three cases of perforation, two patients are not aware of the condition and, therefore, did not mention it in their replies, and in the third case due to an extreme anterior deflection, the patient is free from symptoms by the use of an ointment at night. (Other perforations were made, but healed by preserving the tissue opposite.)

In the correction of the abnormal septal and associated conditions there were marked cases of asthma, headaches, aprosexia, disturbance of vision, progressive otitis media, erysipelas (from infection of erosions), chronic eczema of the lip, recurrent bronchitis, chronic nasopharyngitis, redness of the external nose, aphonia, perversion of the sense of smell and taste, and dyspepsia, as well as the mechanical obstructions and chronic catarrhs.

Though I believe that, with proper modifications, the submucous resection of the septum is adaptable to all forms of deformity and that, according to the law of physics, a hollow cylinder is just as strong as a solid one containing the same amount of material, yet there is a possibility that, in an extensive resection in a debilitated subject, from injury of the perichondrium, there might result a sloughing of the cartilage wall, with resulting deformity. For this reason and because older methods have been the result of a careful evolution and adaptation to special deformities, we should become familiar with all and individualize our cases.

The window resection, when indicated, has stood the test of time and if the principle of the hollow cylinder be carefully preserved by leaving sufficient margin superiorly and anteriorly, there is no other procedure by which the rhinologist can obtain such satisfactory results in the whole field of nasal surgery.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. EMERSON AND PURCELL

DR. JOHN O. ROE, Rochester, N. Y.: In the correction of deviations of the septum it must be recognized that no one operation is adapted to or suitable for the correction of all the various forms of deviation which may be found, nor even for the different conditions that may, in many cases, be found in the same septum. Every case, therefore, must be studied independently, and the operative procedure selected which is best suited to that particular patient, regardless of any predilection that the operator may have for any special or favorite method.

Before attempting a submucous resection on the septum, its feasibility must be determined by the condition of the septum itself regarding its thickness as well as the location and degree of the deviation. Then too, we must take into consideration the etiology of the deviation, whether it be idiopathic or traumatic. Of course we recognize the fact that in nearly all cases there has been a traumatic cause, either of a recent or of a remote origin occurring perhaps in childhood; but the recent cases have to be dealt with differently from those that are due to a very remote cause, in which latter cases the submucous resection is best suited. In traumatic cases of recent origin, however, in which there has been more or less crushing of the nose, submucous resection must be undertaken very cautiously on account of the lack of support of the dorsum of the nose, and the liability of the sinking in of the bridge, thereby leaving a marked depression and a marked increase in whatever external deformity there may have been. I have seen a number of cases in which a marked deformity of the nose had resulted from the injudicious employment of the submucous method.

In those cases in which the thickening is confined to a limited area or to one side of the septum, associated with a spur, a limited resection of the thickened portion only should be performed. It is as unwarrantable in these cases to take out the whole framework of the septum as it would be to resect the whole femur to correct a limited deformity that had resulted from a fracture.

In the correction of other portions of the septum not requiring resection, the operation should be supplemented by other operations not requiring the removal of the bony or cartilaginous framework, such as may be accomplished by the use of my fenestrated fracturing forceps or other well-known methods sometimes employed for the correction of deviations of the septum. In all these cases it is important so to maintain the septum in its proper position that the passages are of equal size, and especially that no contact is left at any point, for no matter how free the passage may be, contact at any point will give the patient the sensation of an obstructed nostril.

If enlarged turbinates are in the way these should be dealt with before the operation on the septum is undertaken. I do not find it necessary in these cases to employ general anesthesia as the operation can be made completely painless by the local use of cocain and adrenalin. In case of an idiosyncrasy against cocain some of the substitutes may be employed. The disturbance from the cocain, however, can usually be prevented by the previous use of digitalis and strychnin. In the case of nervous and apprehensive persons a hypodermic of morphin or other suitable hypnotic will remove the fears and render them most helpful and tractable patients.

DR. O. T. FREER, Chicago: The L flap, or open method of resecting deflections of the nasal septum, which I have gradually perfected since 1901, has nothing in common with the methods based on different principles brought out later. It was obvious to me that the promise which these other methods gave of an easy and speedy performance, with a simpler instrumentarium than mine would secure their immediate popularity and for this reason the procedures of Killian and of Hajek, advocated by Ballenger, soon became the most followed. But it was also obvious, from the insight into the complex structure of deviations of the septum given me by resections, that these methods, in which the submucous resection was described as a quick manipulation, easily accomplished through a slit at the front of the septum and with blunt or chisel-edged instrument for the elevation of the coverings, were based on superficial preconceptions of the task to be performed, rather than on a thorough understanding of its difficult nature.

An essential feature of my method is the preliminary incision creating the reversed L flap. It is this flap which uncovers to sight the entire deflection, thus leaving so small an amount of the mucous coverings on the convexity of the deviation to interfere with vision and instruments, that no obstructing long intranasal speculum is needed, a necessary instrument where the buttonhole cut is used; for this form of incision leaves all of the mucous membrane on the side of the convexity in the way, in danger of being torn by forceps and other instruments.

In spite of the great advantages offered by the L flap, they seem to be but little understood except by those who have seen my operation, most surgeons having difficulty in making this flap and hence adopting the simple incision at the front of the septum. Certain improvements in the creation of the flap make a description of the later method of its production desirable here. The flap is begun by a horizontal incision, which follows the base of the septum from behind the deflection forward into the nasal vestibule along the junction of the septum and nasal floor, that is, along the very bottom of the septum. In almost all cases this extends forward into the cutaneous covering of the anterior part of the septum. I was glad to find that Dr. Purcell had independently arrived at the same conclusion in regard to the placing of the horizontal portion of the L. This part of the incision is made with the round-edge knife D of my septum set of instruments, and should, if possible, penetrate at once the perichondrium and periosteum to the cartilage and bone. The elevation of the flap is begun from this cut as shown in accompanying illustration in the left naris with the round-bladed knife I. So soon as a little of the flap is loosened it is held up with a blunt elevator and the wound is wiped, that it may be seen whether the perichondrium be really divided or not. Usually it will be found that the mucosa alone has been severed and that a second cut is needed to reach the cartilage and bone. Then the perichondrium and periosteum are dissected up to where they may be readily lifted with a dull-edged instrument. The latter elevates the coverings backward on the septum so far as it can reach, regardless of an existing vertical angle of deflection, provided it can pass beyond it, as is usually the case. Then the keen elevator is introduced under the uplifted covering through the horizontal incision of the L as far as it can be made to go posteriorly and then made to cut through the coverings in a line at right angles to the base of the septum and from underneath, not from without, as the vertical cut of the L flap was formerly made. This method permits the elevation of so large an L flap that it includes two-thirds of the mucous coverings of the usual deviation and thus leaves the convex side of the deflection skeletonized and perfectly exposed to view without the use of a speculum. The flap is held forward by the assistant with one of the retractors which hold the nostril open in place of a speculum. An advantage of the L flap is a perfect exposure to view of the cartilage before making the first incision through it, which may thus be accurately placed at a sufficient distance behind the nasal bridge to insure its support. Hematoma cannot occur where the flap is used. I have found the submucous resection on children as satisfactory as for adults. Nine years, during which I have never refrained from operating on even very young children, have shown me that the objections to resecting deflections in childhood are purely theoretical.

DR. R. P. SCHOLZ, St. Louis: I agree that the submucous resection is applicable to all cases of septal deviation needing correction. If there be an exception, I take it to be in the correction of the septal deviation of very young children in whom the removal of cartilage might give rise to the fear of disturbing further development of the nose. I was surprised to hear Dr. Emerson say that he uses general anesthesia for this operation, for I have found the local anesthesia satisfactory. I make a simple incision along the anterior edge of the cartilage, beginning high up and extending down on to the floor of the nose. Gauze saturated with petrolatum makes a very desirable dressing, but paraffin gauze, as used by Williminski, makes the ideal tampon.

DR. BRYAN D. SHEEDY, New York: In the graduate institution with which I am connected, we average from fifteen to twenty submucous resections a week. A great many of the men present learn their submucous resection work at that institution. The operation performed is the regular one devised by Killian, the flap method as suggested by Freer occasionally being used. So far as infection is concerned,

I have seen in the last five years but two infections and practically no perforations. Our patients are operated on just as they come to the clinic without preliminary preparation. Children are operated on when they have a deflection of the cartilaginous septum sufficient to interfere with normal respiration and I have yet to see any bad results come through the submucous resection operation performed on children. Some one referred to deviation of the septum in colored people. The African skulls in the London Museum show very few deviations of the septum and I explain this condition through the fact that the colored and lower races seldom suffer from adenoids, the mouth-breathing in young children caused by adenoids being, to my mind, the principal cause for the many deviations we see.

As to deformity following the operation, many are familiar with the article I wrote four years ago, in which I gave photographs of six or seven patients, one in my own practice, who had appeared at the hospital with depression of the bridge of the nose following the resection operation. As we seldom see this deformity now, I have concluded that the sinking of the bridge was due to the removal of too much of the cartilage, the small amount of cartilage left under the bridge being weakened by inflammatory changes and therefore not sufficient to support the structures.

I usually depend on the Bernay sponge for after-packing, removing it the day following the operation, and my results have been most satisfactory. I have never used strips of gauze nor have I ever stitched the mucous membrane. I believe the stitches are an unnecessary hardship for the patients and I also believe that this operation should be done as quickly as possible, thus saving the patients unnecessary shock.

Dr. W. L. Ballenger, Chicago: We are not all expert operators, skilled as is Dr. Freer, and some of us get perforations and we are not going to quit operating because of that, but it is interesting to know how to remedy this condition if it occurs. I learned a very simple way recently from Dr. Goldsmith of Toronto. He places the cartilage removed into normal salt solution and if he happens to get opposite perforations he straightens the cartilage and reinserts it after finishing his resection between the mucous membranes and then by granulation the mucous membrane grows down over it, the cartilage becomes absorbed, being a foreign body, and a perforation is prevented. I think this is a very interesting thing to know.

In children whose septums are not yet wholly developed and who need the centers of development left undisturbed I follow the Sluder method. It is adapted to young children in whom there is extreme deviation from trauma. Sluder makes an incision above the deviation, one below, and one at the crest. Then he springs these two ribbons of cartilage together and they are held about 4 days until union takes place and the result is very good.

Dr. O. Tydings, Chicago: I would protest against one class of operations. We all do the submucous operation and the sinking can be due only to encroaching too high up on the septal cartilage or to subsequent infection. In traumatic deformities in children, if a Gleason operation be done, and at the same time a proper splint put in, there is no reason for doing a submucous resection. It gives very beautiful and perfect results.

In packing the nose after a submucous resection I never leave the packing in more than ten or twelve hours. If I do the operation in the evening I remove the packing next morning. My packing consists of rubber tissue in which I have loosely placed cotton and I just use packing enough to keep the perichondria in contact. I have never found it necessary to use it very firmly.

Dr. G. Sluder, St. Louis: Since Dr. Ballenger has been good enough to mention the operation which I described in 1906, I should like to add a word in this connection. His description is accurate and comprehensive. There is nothing for me to add to that. I agree with his feelings concerning the development of the nose. My belief is that a rigid septum is necessary to prop the nose up during the developing years of life. I believe this because in cases in which a perforation of the septum has occurred in childhood—the simple or traumatic perforation which occurs at the lower anterior portion of the cartilage—there is uniformly a greater or less depression in the profile of the nose opposite to it. At least this is true according to my observation extending over 12 years. I believe this disturbance in the nutrition of the septum to be responsible for the depression in the profile. If this be true then all the more would be necessary the septum itself. In one patient in whom the septum was straightened by this operation, and whom I was able to follow for 10 years, the double layer of cartilage shrunk until it had the thickness of only a single layer. It then appeared as a normal septum.

Dr. Francis P. Emerson, Boston: We all admired the work of Dr. Roe and Dr. Freer in plastic nasal surgery and in perfecting the operation of the window resection of the septum. I am therefore particularly fortunate in having them discuss my paper. I do not want to be misunderstood about the reproduction of cartilage. In those cases examined it had not been reproduced. In children I have been conservative, preferring other methods. In developmental cases with moderate deflection, our dental friends are helping us materially. Some of the cases reported last year by Dr. Foster of New Bedford showed remarkable results. In regard to anesthesia, you will notice in my paper that a large percentage of operations were done under cocain. I do not question but that all can be done that way. I have simply found that there are in Boston a large number of nervous women in whom the element of shock is of considerable importance and, for the comfort of the patient and my own convenience, I like general anesthesia.

Dr. Clyde E. Purcell, Paducah, Ky.: I thank Dr. Freer for his endorsement of my incision and wish to bear him out in his statement that there are valid objections to the incisions so far offered. I am glad he stated before this body of laryngologists that we had practically reached the same conclusion working independently and I am also glad I read my paper here before he had a chance to describe this new incision or I might have been accused of stealing his thunder. I want to emphasize his position that perforations are preventable and should not occur. My experience in the cases herein reported bears him out. If the incision is placed well back in the nose and brought down on and partly across the nasal floor ample operative room is insured. It is easier in my experience to begin the elevation at the highest point of the incision on the septum, working down and not from the anterior free border. Getting down into the bottom of the acute angle seems essential, especially in the cases in which the crista is much involved. Unless there is a great deal of misplacement of the cartilage anteriorly, it is not necessary to bring the horizontally curved incision as far forward as I have represented in the drawing. I have had no personal experience with Dr. Sluder's method but it would seem that it has a very limited field of usefulness. When I get a suitable case I am going to try it. I want to commend the speaker who made a plea for more complete and thorough work in nasal surgery. It is a very easy matter to remove some cartilage but it is very difficult to remove the obstruction fully without injury to the integrity of the nose.

Now, in regard to sutures, it may be a little fad of mine, but I have had such fine results, with no retraction, that I shall continue to use them. I have also devised a little angular knife suitable for making incisions through the mucous membrane and also valuable for elevating the mucous membrane, cutting through and removing the cartilage. By using this I lessen the number of instruments employed. I think that we should not hesitate to give children the advantage of free nasal respiration. I understand that Dr. Killian operates on children and I certainly see no reason why we should not.

Diagnosis of Whooping-Cough.—During an epidemic, or with a history of exposure, whooping-cough should be diagnosticated without special difficulty, but sporadic cases may hold many symptoms common to other diseases, e. g., acute bronchitis, influenza, tuberculosis, tonsilitis and adenoids.—C. Thorington, in *Gulf States Jour. of Med. and Surg.*

SURGERY OF CYSTIC DEGENERATION OF THE KIDNEY *

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The purpose of this paper is to direct attention to the practicability of giving surgical relief from certain symptoms or ill effects of cystic kidneys. The number of patients with cystic kidney for whom any given operator may render service is necessarily small; the majority are not aware of its existence until late in the course of the degeneration, and then it is impossible to stay the process or to relieve the symptoms.

The lack of individual experience necessarily leads to an uncertain surgical attitude toward the lesion, and when, during an operation, such a condition is discovered, the operator is unprepared to do the most appropriate thing to bring about a surcease of symptoms or to check the progress of the cystic degeneration.

For the purpose of getting directly to the subject, and before discussing the nature of the lesions and its relation to surgical treatment, I will relate briefly the case of a man who came to me just one year ago for treatment:

History.—June 5, 1909, the patient, S. S., a man aged 49, of rather thick build, of a muddy complexion but otherwise in seemingly good strength, came to the hospital to obtain relief from a bloody urine which began about June 1. There was nothing in his past history which shed light on the condition. He had not suffered from gonorrhea or local injury to the genito-urinary tract, nor did he give a history of any general infection or body injury. At the time of his visit, the blood alone indicated to him that something was wrong, for otherwise he had not suffered, not even from frequency in urinating. His urine was examined and found to contain a large quantity of blood. On settling for several hours, fully one-half of its bulk was composed of a dark muddy deposit.

Physical Examination.—This revealed an enlarged left kidney which was slightly tender. On reflection the patient remembered that he had been conscious of the left side for months. This consciousness, however, was never of real pain nor even of discomfort sufficient to cause apprehension of disease. The patient was given internal medication, returning every day or two for observation. By June 10 he began to grow weaker and shorter of breath, and as the blood continued, the necessity arose for direct surgical intervention, if possible. On June 11, a cystoscopy revealed blood coming from the left kidney. On June 13, the patient came into the hospital for closer observation. He was restricted to a low diet and complete rest. During the first twenty-four hours in the hospital, he passed 42 ounces of very bloody urine; the next twenty-four hours, 34 ounces, the next only 30, but the next, 45 ounces. He was then prepared for operation, though a positive diagnosis had not been made, knowing only that the loss of blood continued and was from the left kidney.

Operation.—On June 18 a lumbar incision exposed a well-developed polycystic left kidney. The appearance was typical and needs no description. I opened the various cysts with scissors and forceps and removed their thin covering and partitions; only the bulkier, solid tissue was left. I spent about twenty minutes ridding the kidney of its cysts. I was greatly tempted to open the peritoneum and palpate the right kidney, but as the skiagram and external palpation indicated no increase in its size, I thought best not to do so. A large boiled gauze sponge was then packed snugly about the kidney and the wound closed at the upper end, leaving the lower open enough to freely drain the field of operation.

Subsequent Course.—The patient made an uneventful recovery. The urine cleared of blood entirely by June 21. The amount passed following the operation was slightly greater than that passed while in the hospital prior to the operation. July 24 the wound was practically healed and the patient was discharged in apparently good condition. In March, 1910, I made an examination of him and found his condition very satisfactory. He says that he feels perfectly well. No recognizable blood has shown in the urine since the operation. The amount passed daily is normal. A sample sent to the laboratory gave the following: Color, light straw, clear; reaction, acid; sp. gr., 1018; no albumin, bile nor sugar. Microscopic findings, a few leukocytes, an occasional hyaline cast and a few large epithelial cells. To palpation of the side on which we operated there was no evidence of reenlargement. There was also, we may note, no increase in size of the opposite kidney. He suffers no discomfort in the wound or along the genito-urinary tract. To all clinical means of ascertaining his condition, he is well.

This case fortunately presented a symptom which brought him to us early—the blood in the urine—and our effort to stop it has resulted in decided relief.

The questions naturally arise: What was actually accomplished? Will the relief be temporary or has the operation had a tendency to check the further progress of the trouble in the kidney operated on?

NATURE, ETIOLOGY AND COURSE

This brings us to a consideration of the nature of kidney cysts, their etiology and course.

R. L. Thompson in a recent review of the subject says:

> The newer literature concerning kidney cyst-formation, especially the work of Ruckert, Busse, Dunger, Herxheimer and Braunwarth have shown that all cysts of the kidney are closely related—with the exception of a small group, they are due to a congenital malformation which seems to lead to this new growth.

He records a post-mortem finding, in an infant which died of an acute infection, of a faulty union of a lobule of cortex with its corresponding pyramid. In this portion of the kidney there was evidence of commencing cyst development.

The cysts which I wish to discuss in this paper are those which are included under the congenital type, whether they are found in the infant or developed later in life; whether single or multiple, in one kidney or both. A small class, which will not be considered, consists of those found in chronic indurative nephritis, the parasitic cysts, the dermoid cysts and those due to cystic degeneration in lymph-nodes and blood-clots.

Rayer, it will be remembered, was the first to separate the polycystically degenerated kidney clinically from those just mentioned. He presented no microscopic differentiation nor did he entertain an idea of the present-day conception of the development of the kidney, but based his opinion purely on the macroscopic appearance of the cystic organ.

Koster first accentuated the necessity for a recognition of two anlagen for kidney development and of a malunion of the two for cyst formation. He, however, considered the anlagen as, on the one hand, the Wolffian duct, forming the ureter and pelvis, and on the other, a mesenchymatous cell-mass giving origin to the rest of the organ.

Hildebrand more clearly developed the theory of congenital cyst-formation, declaring, as Kupffer had demonstrated, that the pyramids and pelvis united with the cortex, and when a congenital failure of the union occurred, there was a disturbance at the location of the convoluted tubules next the pyramid with marked proliferative activity of certain cellular elements. This produced a draining back of the secretions and cyst formation.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

Ribbert later demonstrated that the obstruction played only a part, and that the cyst formation was to be accepted as a new growth.

Nauwerck, Hufschmid, Singer and others, look on the whole process as one of cystadenomatous formation—a new growth.

Wigand on the other hand, considered the cysts due to an abnormal spouting from the kidney anlage of canals which later become cystic.

The complete picture of a polycystic kidney must of necessity suggest a new growth, whether the basis of such a change lies in a congenital malunion of the cortex and pyramid, a congenital misplacement of certain cell elements, a congenital spouting of abnormal urinary tubes, an acquired epithelial proliferative process or an active connective tissue proliferation with obstruction of the urinary tubes.

Such a process may consist in the formation of one or several large cysts or may be characterized by a complete honeycombing of the kidney with a great number of cysts of all sizes, from those of microscopic dimensions to those as large as a walnut or even a hen's egg. When such a formation does occur in an individual, both kidneys are, as a rule, involved and not uncommonly the liver as well.

DIAGNOSIS

In making a diagnosis of cystic kidney, four symptoms may be considered: pain, hematuria, a recognizable growth in the side of the abdomen, and uremia. Pain, or perhaps discomfort, is not constantly present; in fact, all of the symptoms may fail until the end, when the greatly compromised kidney activity leads to the final uremia.

The presence of blood is much more common than either pain or discomfort or the discovery of a growth. In fact, it is the one symptom which most often calls for relief before the final uremic stage.

TREATMENT

The treatment of the condition is essentially surgical, for otherwise no treatment can be of any avail whatever. The first three symptoms are all amenable to surgery, at least, by this means alone can relief be offered, but for the last symptom, uremia, nothing can be done. It is true that in the uremic stage by cutting down the necessary kidney activity to the lowest possible degree through diet restriction, rest and by helping vicarious elimination, some short prolongation of life may be given, yet this is but temporary.

What surgical treatment should be resorted to in these cases? The majority of recorded operations were nephrectomies. I should like to offer this criticism of such a procedure. The removal of a kidney, especially as both are in the vast majority of instances involved in a like process, is a sacrifice too great to be permitted. The aim of any surgical procedure should be to save every grain of kidney tissue possible, while at the same time offering relief from the symptom complained of. In an organ of such vital necessity to the body as the kidney, but two conditions justify nephrectomy: first, the presence of an infectious process producing a serious general intoxication or the possibility of spreading a life-destroying infection; second, the presence of a malignant growth.

In cystic kidney neither of these conditions exist, for the final uremic state results purely from the loss of kidney tissue, rendering the condition analogous to that of the contracted kidney. Some have recommended puncture of the cysts, others injections of cyst-destroying chemicals into the various sacs.

In the case reported I believe I have accomplished a satisfactory result by excising the non-functioning cyst coverings and septa and causing a healing of the wound through granulation, with union to the surrounding tissues.

This patient was bleeding freely and losing strength rapidly, yet within three days following the operation, all trace of blood ceased and has continued checked until the present time. The urine is apparently normal and his general health most excellent. What ultimate good has been done must be determined through time. Whether such a procedure will check further cyst-formation by diverting the blood in the engorged vessels through other vascular channels and thereby relieving congestion, cannot be determined short of a very considerable experience, but at least the patient still possesses his kidney and is able to care for the greatest possible amount of kidney work under the circumstance.

Dr. Ludwig Pick of Berlin, answering an inquiry as to the possible good of the operation, replies as follows:

I hasten to answer your question concerning the case of cystic kidney. According to my opinion, there is no differentiation possible between congenital cystic kidney of the newborn and of adults. I believe that all these cystic kidneys result from a congenital cause and that they do not have their beginning in middle life, and if they become manifest in middle life, they had their existence before. Why a stronger growth should develop at this time, there can be no theory offered and only a problematic answer may be given.

I personally believe that the kidney originates from two separate anlagen: first, the ureter pelvis and collecting tubes proximally out from the ureter anlage; secondly, the cortical portion of the kidney from a special blastema. When the two anlagen do not meet exactly or normally and unite, then we have a formation for cystic kidney through an earlier or later development of an embryonic epithelium. Why in one case earlier and in another case later, is, as already said, not entirely clear. As you see, my opinion is that the kidney is developed from the two anlagen and this explains the origin of the cystic kidney through misbuilding.

Now, indeed, I believe that in your most interesting case, a final good result will not be obtained. But as the largest cysts were opened, it will last a certain time until the little ones, not yet opened by you, and not yet large enough, will make their appearance.

I have seen a case here in which a cystic kidney was removed entirely, and the other was, at the time, not apparently cystic. The patient lasted ten years until the other kidney became cystic and then the woman died.

ABSTRACT OF DISCUSSION

Dr. Daniel N. Eisendrath, Chicago: I regret to dispel the rosy illusion under which Dr. Witherspoon is laboring with reference to the prognosis in his case, as he seems to think that his patient will recover. The consensus of opinion among pathologists and surgeons who have had occasion to see many of these cases of polycystic disease of the kidney is that in about 99.9 per cent. of the cases the condition is bilateral, and that it is only a question of time until both kidneys are so atrophied that no secreting tissue is left. Those cases present themselves practically in one of three ways. I have seen them in two of the three. In the first, the patient is brought into the hospital in uremic coma, with no previous history obtainable. At the autopsy we find that both kidneys are converted into a mass of cysts. Each kidney is three or four times as large as normal, and is a mass of cysts, with practically no kidney tissue left. So long as there is enough kidney tissue left between the cysts the patient will not have

a uremia, but as soon as there is less kidney tissue present than can take care of metabolism, uremia is inevitable.

In the second clinical picture the patient presents himself with severe, constant, almost uncontrollable hematuria. These are the patients for whom I believe that something can be done, and Dr. Witherspoon's case shows the benefit of surgical intervention. We might open a few of these cysts in the hope of establishing some collateral circulation, so as to diminish the vascularity, and I believe that it is in this way that the benefit seen in his case can be explained. But, so far as prognosis is concerned, the average experience is that within a definite period of years, owing to the progressive bilateral character of the disease, both kidneys will be involved to such an extent that a fatal termination is inevitable.

DR. C. M. NICHOLSON, St. Louis: I have had to deal with three cases of cystic kidney and all were unilateral. In each case the probable diagnosis was based on the presence of a tumor in the lumbar region, easily palpable and blood in the urine. In one of these cases there was marked pain. In the first case, the kidney being only about twice its proper size, nothing was done; in the second an incision was made, the diagnosis verified, eight or nine cysts punctured and the wound packed with gauze. The patient left the hospital apparently well four weeks later, but after nine months returned with a large lumbar abscess which was connected with the kidney. He has occasionally had abscesses form, though he declined to have an operation, further than drainage. The third case was the largest cystic kidney, with one exception, thus far reported (*Ann. Surg.*, xxxvii). It extended about twenty-two inches, occupying all the right side of the abdomen. There was not only a tumor and hematuria, but marked pain at times. A median incision was made, the diagnosis verified, the opposite kidney examined and found to be the proper size, thirty or forty cysts punctured through the loin and the entire mass removed. Dr. Ralph Thompson made an extensive study of this case and demonstrated that the mass was a cystic kidney, not of new formation, but due to dilatation of the uriniferous tubules. The patient made a perfect recovery and for the last few years has been entirely well, attending to all her duties. The treatment of these cases depends on the pathologic condition present. If all or most of the kidney substance has been destroyed, then the best interests of the patient are conserved by removing the mass.

DR. JAMES E. MOORE, Minneapolis: Inasmuch as this is a congenital condition which eventually ends with death, it seems to me that it is very rarely indeed that a nephrectomy is justifiable, because one is liable to have some kidney tissue left which is functionating. These are not surgical cases until such time as they begin to have complications that may be relieved by surgery. My experience is limited to two cases, in which I could not accomplish anything. In the first case I operated under a mistaken diagnosis, on a woman 50 years old, who was supposed to have an ovarian cyst. She was suffering from pressure symptoms and when I opened her up I was surprised to find that it was retroperitoneal, extending behind the kidney. I removed the cyst.

The second case was that of a man, between 40 and 50 years of age, who came with an obscure abdominal tumor, and was easy to diagnose congenital cyst. Both kidneys were large enough to map out the lobules. He came to me with fever and with a diagnosis of his own. He had lived in the south and said that he had had repeated abscesses of the liver. I did not question his diagnosis until I found the kidneys. His cysts were infected and he was becoming septic. He gave a history that Nature had opened some of his abscesses, and it seemed to me that I might help Nature this time, so I opened and drained three or four septic cysts. He was restored to health sufficiently so that he could attend to his business for about a year, when he developed uremia and died.

DR. T. C. WITHERSPOON, Butte, Mont.: The points I wish to bring out are these: First, we have fallen into the habit of accepting a statement as being authoritative and allowing it to become accepted generally without giving it careful scrutiny. That these cases are congenital we can, of course, agree, if by that we mean that point at which the trouble occurs is the point of union between the two anlagen where we find active cell proliferation. But that this should be looked on as a congenital condition purely because it occurs at this anatomic point I cannot agree. It usually does not occur until the fifth decade of life, scarcely under the third, except in the type of cysts found in the infant, and it evidently comes from this proliferative cell activity. I do not know what induces the overgrowth of cells. I am not willing to look on this lesion as some Presbyterians do their future state, that is, as a matter unalterably fixed by predestination. I do not believe that it is. These patients may have a chance to recover. I am going to watch my cases and see what will happen and report later.

THE NUTRITION OF THE FEEBLE INFANT

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The proper nourishment of feeble infants is a problem that taxes the resources of the most skillful pediatrist. Digestion and assimilation may be poor either by inheritance or from faulty feeding, and when, from any cause, the general vitality of the infant is lowered, the digestive tract is usually the first to suffer and the last to recover tone. Whether the infant becomes feeble from errors in diet and hygiene, from illness or from poor inheritance, improved diet and hygiene form the only successful treatment. Drugs are of little or no avail. If these patients are not relieved, sooner or later some form of atrophy or marasmus will result—a condition in which a chronic digestive weakness is the principal evidence of the depressing symptom-complex. The large general death-rate of early infancy can be checked only by the most careful attention to the diet and care of this class of feeble infants. It must be confessed that thus far our results have not been very brilliant. The object of this paper is to discuss some of the factors that enter into this problem, with the idea of suggesting the lines along which improvement may take place.

The structure and function of the digestive tract, the form and quantity of the food elements that are given, especially in relation to the assimilative power of the individual, and the most improved hygiene must all enter into such a discussion. With reference to the ingestion of food, the stomach will naturally call for the first consideration.

I. THE MOTILITY OF THE STOMACH

Our knowledge of the general capacity and function of the stomach in early life has been fairly well worked out. In normal infants, during health, no great difficulty is encountered by competent feeders in reference to the kind and quantity of the food and the intervals of its administration. In feeble and badly nourished infants, however, the weak action of the stomach, especially in its muscular power, is the source of much trouble. The weakness and atrophy of the general musculature is exemplified in a marked degree in the motility of the stomach. At best, the musculature of the stomach and intestines is not highly developed during the first months of life, and in feeble infants, in whom the general muscular tone is below par, the digestive tract suffers very markedly from this cause. This will doubtless throw some light on those cases in which during life serious digestive symptoms have been noted but after death little pathologic change has been observed as far as the mucous membranes are concerned.

With this condition in mind, a series of twenty-one cases was carefully studied with regard to gastric motility, as in the case of the feeble infant it is important to make certain that the intervals of feeding are not too frequent. The ages of the patients were as follows: Two weeks, 1; three weeks, 1; six weeks, 1; two months, 1; three months, 6; four months, 4; five months, 2; six months, 1; seven months, 1; twelve months, 3. These infants were taken from the wards of the hospital and represent all grades of malnutrition from beginning cases to those in the last stages of atrophy. We may generally classify the cases as thirteen of marked feebleness, three cases of malnutrition in a milder form and five cases just at the beginning of faulty nutrition. It was, however, impossible to form any definite conclusions as to gastric motility based on the age of the child from these cases. The older children were brought to the hospital either suffering from some grave general disease, or because they had failed to gain weight and were becoming atrophic. They thus formed poor material from which to determine normal gastric motility.

Of nineteen patients that were examined at the end of three hours, only six could be shown to have approximately empty stomachs, and these six, with one exception, were holding their own and in no case could free hydrochloric acid be determined. In thirteen out of the nineteen cases, it was absolutely demonstrated that there was a considerable residual amount of food still remaining in the stomach. In all these cases there was a positive Fehling test, and curds and whey, either singly or together, were present. It is interesting to note that butyric acid fermentation was marked in six of the cases, and in two of the cases in which the stomach was apparently empty there was a faint trace of butyric acid. In five of the seven patients examined at the end of three and one-half or four hours, the stomachs were surely empty. Of the remaining two cases, one showed many curds at the end of four and one-half hours, while the other showed only a few small curds. These last two patients were losing weight rapidly and the butyric acid fermentation was marked.

In only two of the seventeen patients examined at the end of two or two and one-half hours, were the stomachs empty. In the other fifteen cases, a positive Fehling test was obtained with one exception, and in four there was a positive Gram test. In thirteen of these cases butyric acid fermentation could easily be demonstrated. Large tough curds, or many small curds with whey were present in all of these cases. In considering the above figures, it should be remembered that few, if any, of the children examined were entirely normal, and that deductions from these results have a value only as a study in the nourishment of the feeble child.

There can be little doubt that, in a large majority of cases, the feeble infant with digestive disturbances has been fed at too frequent intervals. Too often a second feeding is given before the previous meal has passed through the pylorus, with the result that each successive feeding has been contaminated. The process of butyric acid fermentation has thereby been set up and kept in operation until, at last, a condition analogous to that of myasthenia gastrica is present. In none of these cases could any great disturbance in acid secretions be made out. The condition of the enzymes was not carefully investigated, but, as it is a well-known fact that the enzymes are not affected until long after the acid secretions have become greatly diminished or disappeared, it may be taken for granted that the enzymes were present in a normal state. While free hydrochloric acid could be demonstrated in only six cases, combined hydrochloric acid was invariably present in fairly large quantities. The average amount was about 30, the lowest being 12, and the highest 48. In nearly every case in which the stomach was not empty, fluid was present, and in a few cases the dilatation was marked. This state of affairs serves to emphasize the fact that in feeble infants gastric motility is greatly decreased, and that whatever may be the case in the normal healthy child, in these atrophic infants it is often necessary to increase the interval between the feedings.

According to Tobler and Bogen and Heubner, milk passes through the pylorus in the case of breast-fed infants in about two hours, and in those taking cow's milk in about three hours. Tobler has further shown as a result of experiments carried on in animals with variously colored milks that each subsequent feeding forms a sort of layer about the earlier one, and thus the food first ingested may be kept in the stomach indefinitely if the feedings are given at too frequent intervals. Granting the truth of these observations, it can be seen at once that it is of the utmost importance to have the meals properly spaced, as otherwise there remains a residuum of food in the stomach which contaminates each successive addition of food. This constantly recurring contamination and overburdening of the stomach results in fermentation, and in time gastric dilatation with a loss in tone of the muscular coats of the stomach may ensue. This explains how a chronic digestive disturbance may lead to the condition known as atrophy.

It is interesting to trace the analogy between this state in the infant and the condition known as myasthenia gastrica in the adult. Myasthenia gastrica is characterized by a loss of tone in the muscular coats of the stomach as a result of which there is a moderate dilatation. Its diagnosis depends on the finding of fluid in the stomach at the end of two hours or more, with a normal gastric secretion. Among the causes bringing about this condition may be mentioned the general debility following any disease and the habitual ingestion of excessive amounts of food. An important element in its treatment is to make certain that the stomach is never overloaded. In atrophic infants these conditions are reproduced and while it cannot be claimed that they are exactly parallel there is a good deal of similarity. Thus in atrophic infants a practically normal gastric secretion may be found with a marked loss of motility if our previous schedule of three-hour feedings be accepted as approximately correct. With few exceptions food and fluid remain in the stomach of these infants well over two hours—in most cases three hours or more—and as a consequence of this stagnation butyric acid fermentation begins and is passed along from one feeding to the next. Hence it should be expected, as in the myasthenia gastrica of the adult, that there should be a marked improvement in many of the symptoms if care is taken to make certain that the stomach is entirely empty for a short period before a future feeding. It is not only desirable that any fermenting material lying in the stomach be passed forward into the intestines to avoid contamination of an incoming meal, but there should also be an interval during which the stomach contents shall be strongly acid so that the growth of harmful bacteria may be inhibited.

II. THE FORM AND QUANTITY OF THE FOOD ELEMENTS

When percentage feeding was first developed, it was assumed that protein, fat, carbohydrates and mineral matter were well-defined entities, and the basis of teach-

ing was that scientific feeding consisted in merely changing the quantities of these ingredients in the food mixtures. Within the past few years an entirely different viewpoint has been taken, principally as the result of an increase in general knowledge of the subject of nutrition. "Protein," "fat," "carbohydrates" and "mineral matter" are now recognized as being generic terms and just about as definite as the terms "wood" or "stone." There may be few who realize that at least twelve different forms of protein, five different forms of carbohydrates and two different forms of fats are used successfully in infant-feeding and the digestive properties of these food elements are modified by the combinations in which they are offered.

To be most successful as a feeder one must be familiar with the uses and fields of these different forms of the food elements and must also realize that there is no fixed and absolute rule to follow in combining them. There are many feeble infants who seem to thrive when the food contains a high percentage of carbohydrates, while others do better if the carbohydrates are kept low and the quantity of protein is raised. Occasionally raising the fats will improve nutrition and this may appear to be what the infant needs and can digest; but most feeble infants seem to have difficulty when the fats are too high. Milk mixtures containing much cream pass more slowly through the pylorus than those low in their percentage of fat and higher in protein and carbohydrates, according to Tobler and Bogen. Many will remember that only a few years ago high fat in the food was looked on by many as the thing to be especially desired, but now low fats seem to have the field. There can be no universal rule with reference to the fats, however, any more than to any other of the food elements.

From the standpoint of nutrition infants need liberal quantities of protein for tissue formation, and enough fats and carbohydrates to supply heat and energy value or calories. But in the management of feeble infants the question of what is theoretically correct must be subordinated to what will practically work, or, in other words, what the infant will take and assimilate.

In some instances a very small quantity of protein, perhaps 0.5 per cent., is all that the young infant can take when the protein is in the form of the natural casein of milk. If the form of the casein is changed by the action of an acid, as in buttermilk feeding, in which the casein is precipitated in a finely divided state, as much as 1 or 2 per cent. of the casein may be digested easily. Lime-water, sodium bicarbonate, sodium citrate and other chemical additions for modifying the casein have been used with milk and all produce good results in some cases. No one method has succeeded in all instances, and it is not likely that any will ever be discovered that will be universally applicable, for the reason that infants are not all alike and conditions are not always the same. If oat gruel, or soy-bean gruel, with its very high protein content, is employed, several times as much protein may often be utilized as if the unmodified protein of cow's milk is used. These facts point out plainly that changing the form of the protein has frequently a very important place in the management of infants.

The changing of the form of the carbohydrates also frequently shows a marked effect in the progress of the infant. The carbohydrates used in infant-feeding are starch, dextrin, maltose, cane-sugar and milk-sugar, and it is often surprising what marked improvement will follow a change in the carbohydrates employed.

It has generally been thought that infants cannot take more than 7 per cent. of carbohydrates, but in Keller's malt soup, which has been advocated for atrophic infants, the carbohydrates, composed of starch, dextrin, maltose and milk-sugar amount to about 13 per cent., or almost double the accepted maximum quantity. The percentage of fat in the malt soup is about 1 per cent. and that of protein about 1.7 per cent. and each ounce yields about 22 calories or almost exactly the same as one ounce of good breast-milk. In many instances Keller's malt soup has given good results while in many others it has signally failed, like every other mixture. Its use proves only one thing; there are some patients who seem to thrive especially well when the fats are low and the carbohydrates high and consisting of a mixture of several forms.

I have long advocated the use of dextrinized gruels for this reason and for the practical results in many cases of difficult digestion. As usually employed, the carbohydrates exist in these gruels in the forms of soluble starch, dextrin and maltose in varying proportions, according to the degree to which the digestive change has been carried. Some atrophic patients, however, do better when the product is largely maltose. This can be attained by allowing an active diastase to remain in the gruel for a longer time at a comparatively low temperature.

The general method to be employed in feeding in difficult cases will have to be determined, to a certain extent, by experiment with the individual infant. If this fact is once firmly fixed in mind, much progress will have been made, as time spent in looking for a universally applicable food will then be used in learning how to make up mixtures of equal nutritive value in which the various food elements may be high or low in quantity and in a great variety of forms. Where the physician now has one or two formulas to draw on he may thus have many, and as he learns to use them he will find that the difference between success and failure often lies more in changing the form and even the flavor of the food than in a profound knowledge of calculating theoretically indicated mixtures. This is particularly the case in dealing with the difficult digestive problem of feeble infants.

III. FINKELSTEIN'S METHOD OF FEEDING

An interesting and somewhat unique contribution as to the cause and relief of nutritive disturbances in infancy has recently been made by Finkelstein, of the Berlin Kinderasyl. Instead of the fat or protein being the usual cause of trouble, most digestive disturbance is referred by him to the sugar of milk. He confirms[1] an earlier report of clinical observations at the Berlin Kinderasyl in reference to the pathogenesis of severe nutritional disturbances in the nursling. He there found that the ingredient in the food especially harmful to the sick infant was the sugar, and that in certain cases even the natural milk-sugar of cow's milk might cause the severest symptoms. He was thus led to hope that a method of nourishment based on a decrease in the milk-sugar would lead to cures that would be impossible with the ordinary methods. The report of improvement following this kind of diet has proved the correctness of the hypothesis and Finkelstein is convinced that a step in advance in the treatment of the nutritional disturbances of poorly nourished infants has been made. Not only may the lighter forms of nutri-

1. Finkelstein: Monatschr. f. Kinderh., April, 1909.

tional disorders be quickly and certainly improved, but patients can be cured that our previous experience has shown could be saved only by breast-milk. The earlier view of the harmfulness of casein is not confirmed and the opinion is advanced that casein in the intestinal canal is directly beneficial, as the intensity of the pathological sugar fermentation, with the ensuing dyspeptic symptoms, is lessened by increasing the amount of casein. A lowering of the sugar increases the tolerance of the intestines for fats and hence will allow an increase in the amount of fats which in the former mixtures, rich in milk sugar, only work harm. The principles of the new method of nourishment are summarized as follows: (1) the cutting down of the amount of milk-sugar and of the salts; (2) in place of this, casein is added and a not inconsiderable amount of fat; (3) a further bettering of the condition is sought by substituting other forms of carbohydrates for the milk sugar, which tends to an increased tolerance.

The food is prepared by separating the casein and fat from one liter of milk. The curds are pushed through a sieve to break them up and then added to half a liter of water. Half a liter of buttermilk without sugar is then added to the mixture. One liter of this food contains the whey and sugar from half a liter of milk, the casein from one and a half liters and the fat from one liter. A small amount of fat and casein are lost in its preparation, but the following are estimated as the percentage ingredients: protein, 4.5 per cent.; fats, 2 to 3.5 per cent.; sugars, 1.5 per cent.; salts, 0.3 per cent.

This method of feeding was tried at the Babies' Wards of the New York Post-Graduate Hospital in a series of twenty cases. The infants, with a few exceptions, were not doing well on the ordinary food when they were changed to the new method. They were all hospital patients and presented the usual difficulties of infants previously badly fed and cared for, and finally sent to an institution for treatment. When the change was made the infants were fed every four hours, day and night, and the food was usually given in lesser bulk than in the previous feedings. Water was given freely between the feedings. The stools generally became gray and homogeneous with a putty-like consistency and dry appearance. There was usually then a tendency to constipation. The results are given in the tabulation above.

A study of this table will show that the results in this series of cases were not very promising. Before starting the new feeding the ordinary percentage method, with and without gruel diluents, had been employed with poor results. At the beginning of the new feeding the infants, as to their nutritional condition, may be classified as follows: in good condition, 6; in fair condition, but a little below normal, 3; beginning atrophy, 4; with atrophy, 3; with marked atrophy, 4. Twelve patients died; eight of these began as atrophic infants and four started in good condition when the diet was instituted. Three patients, which began as atrophic infants, increased in weight, and five increased somewhat in weight who began in good condition. Altogether, eight patients gained slightly in weight and twelve lost in weight on the Finkelstein feeding.

It seems to me that when benefits follow this method of feeding, the results are due more to the form in which the protein is given, the casein being in a very finely divided state, than to the lessened amount of sugar in the mixture. The food appears in some cases to check the rapidity of atrophy temporarily and hence may have a restricted usefulness. Judging from the character of the stools it may also act well in certain forms of diarrhea.

TABULATION OF RESULTS FROM FINKELSTEIN'S FEEDINGS

		—Ordinary Feedings—			—Finkelstein's Feedings—			Condition	—Final Condition—		
Case.	Age, Weeks.	Days.	Gain, Oz.	Loss, Oz.	Days.	Gain, Oz.	Loss, Oz.	at the Start of Finkelstein's Feeding.		Gain, Oz.	Loss, Oz.
1	3	..	Stationary		17	8	....	Good.	Improved.	8	..
2	3	..	..	....	21	5	....	Good.	Improved.	5	..
3	4	8	..	2	29	..	7	Fair.	Death.	..	9
4	6	30	..	12	6	..	7	Marked atrophy.	Death.	..	17
5	6	10	..	7	6	1	....	Beginning atrophy.	Death.	..	6
6	8	9	..	10½	32	15	....	Beginning atrophy.	Improved.	5	..
7	8	32	..	10	27	5	....	Fair.	Death.	..	5
8	8	15	..	10	36	..	23	Good.	Death.	..	28
9	13	6	..	4	14	15	....	Fair.	Improved.	7	..
10	13	..	..	....	22	..	1	Good.	Stationary.	..	1
11	13	37	..	25	27	10	....	Atrophic.	Improved.	7	..
12	13	..	..	....	22	..	30	Beginning atrophy.	Death.	..	30
13	13	23	..	17	3	..	3	Atrophic.	Death.	..	20
14	13	13	..	19½	2	..	4½	Marked atrophy.	Death.	..	24
15	13	16	..	16½	6	..	6	Moderate atrophy.	Death.	..	22½
16	13	6	..	10	7	..	10	Atrophic.	Death.	..	20
17	13	15	..	3	11	..	18	Good.	Death.	..	20
18	17	27	..	19	51	..	8	Atrophic.	Death.	..	27
19	21	3	4	....	31	2	....	Good.	Improved.	5	..
20	26	13	..	7½	6	..	4	Marked atrophy.	Death.	..	11¼

IV. HYGIENIC MANAGEMENT

The hygienic surroundings have a most important effect on the nutrition of the feeble infant. If the environment is faulty the best care and feeding will usually prove ineffectual. These patients require an altered environment that will furnish plenty of fresh air, good general hygiene and individual care. For this reason they never do well in institutions, no matter how carefully and scientifically they are there fed. They cannot assimilate the best of food without plenty of good air to assist in its oxidation; oxygen is as necessary a food for them as protein or fat. It is only individual housing and care with constant oversight that can accomplish good results. Even an ignorant but kindly woman in a home can often get better results than a trained nurse in a hospital with a series of cases to look after and a stated routine to enforce. This is especially true in charitable work, where relief of feeble infants can be much better accomplished along the lines of family life with individual supervision instead of the collective life with institutional methods.

Acting on this idea, the Speedwell Society was started at Morristown, N. J., in 1902, and I have ever since boarded out my atrophic infants there under the supervision of a doctor and trained nurse, who watch and treat the cases under the care of the various foster-mothers. The results have been better than with any other method of treating this class of cases. Thus, among 121 infants under 3 months, 45 died; 95, from 3 to 6 months, had 29 deaths; 83, from 6 to 12 months, had 21 deaths, and 85 infants, from 1 to 2 years, had only 8 deaths. These infants were all poorly nourished

at the start, from bad hygienic surroundings, with various degrees of digestive disturbance from faulty feeding on the bottle, and stationary or losing weight. Although all had to be kept on bottle-feeding, a good proportion were not only saved but were restored to fair and even vigorous vitality. Under the old institutional methods nearly all would have died.

I would express my thanks to Dr. Pease and Dr. Leopold of my staff, to the former for undertaking the work on the motility of the stomach, and the latter for applying the technic in the Finkelstein trials.

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THE PROGNOSIS IN CONGENITAL DISLOCATIONS OF THE HIP *

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The subject of congenital dislocations of the hip has in recent years been so thoroughly covered in orthopedic text-books and monographs that most of its phases can be looked on as definitely settled. There are, however, a few problems that still remain open and require further observation and discussion. There is still considerable difference of opinion as to the ultimate prognosis in congenital dislocations of the hip, and, as is usual in such cases, only carefully compiled statistics can definitely settle the question. It is with the hope of aiding a little in the solution of this phase of the problem that I have decided to consider it and to add a report of the cases which I have myself treated, and to discuss briefly some of the factors which seem to me to have been most potent in producing the large percentage of complete or partial failures reported in the literature.

For the sake of clearness I wish to classify these cases under three headings: first, those cases in which no serious effort has been made to reduce the dislocation; second, those cases which have come to the surgeon too late for a successful bloodless reduction (while there is no hard and fast age limit, I think it is safe to say that after the sixth year in double and after the eighth year in single dislocations an attempt at bloodless reduction becomes more and more difficult and dangerous with less and less likelihood of successful accomplishment); third, cases of patients who come in time for the bloodless operation, in general before the age of 6 in double and 8 in single dislocations.

If untreated, or ineffectually treated by braces, Buck's extension, etc., the prognosis is always quite bad. At the very best there exists an unsightly deformity which persists through life and often becomes more pronounced as the patient grows older. Added to this we have a displeasing gait, which is either a limp or a waddling duck-like movement. These two factors alone are serious enough afflictions, especially for girls, who are the most frequent sufferers, but this is by no means all. The power of endurance is nearly always somewhat, often greatly reduced. Usually the older the patient grows the more the endurance suffers. Besides, there is no way of telling at the age of 3, for instance, which child will get along fairly well and which one will be a great sufferer in later years. Some children manage to get along comfortably until the age of puberty or until they have some severe infectious disease or other great physical or mental strain, after which they seem never again to regain sufficient endurance to be able to carry this extra handicap.

Lorenz quotes Halsted as stating that 31 per cent. of all adult patients suffer pain, especially when fatigued. It may vary from slight discomfort to such a degree of severity as to incapacitate the patient from all work that requires walking or standing, and in extreme cases walking may become impossible.

Bradford reports five cases in women in his own practice who suffered severe pain when they exerted themselves to the equivalent of walking a mile at a stretch.

One of my own patients, a girl of 17, suffered great discomfort, even though her work was no more strenuous than is required of a general practitioner's office attendant. One patient, an unmarried woman, aged 35, whose pain simulated coxitis and who had been treated for coxitis for a considerable length of time, was found on careful examination to suffer from congenital dislocation of the left hip. Finally, one of the most serious consequences of untreated congenital dislocation of the hip is the resultant pelvic deformity, which in women may be the cause of dystocia.

By some the belief is still held that in a certain percentage of cases a spontaneous cure may take place, and that a new joint may be formed. This opinion is based on the fact that in traumatic dislocations this sometimes takes place. Those who take this position seem to forget, however, that a traumatic dislocation and a congenital dislocation are very different. In the former the head slips out of the capsule and can occasionally actually make for itself a pocket simulating a joint, while in the latter case the head remains within the capsule and cannot do this.

The old methods, such as supports to the dislocated hip by means of pelvic bands, corsets and braces of almost every conceivable description, are of course only palliative and have so far as known never secured a permanent reduction. That Paci secured some cures by his method is definitely proved, but nowhere, not even in his last article, have I been able to find any statement as to what percentage of cures he can effect by his method.

I believe we all agree that the operation of choice is the functional weight-bearing method, or so-called bloodless method of Lorenz. As stated above, after the age of 6 in double and 8 in single dislocations, successful reduction by this method becomes possible in a smaller and smaller percentage of cases the older the patient grows.

Thus, for instance, in my own cases, in three single and four double hip dislocations, or seven hip cases in all, I failed to secure satisfactory reduction every time. I secured anterior transposition with fair functional result once. When we add to this number a considerable number of cases of older patients, whom I have examined at various times at my office and elsewhere, but of whom I have kept no record, in whom the displacement was so marked and the muscles so shortened that an attempt at bloodless reduction was clearly out of the question, it becomes evident that the percentage of successful reductions in patients past the age limit is very small.

Unfortunately I am unable to find authentic figures in the literature which convey a clear idea as to the results obtained by other surgeons in cases of patients who have

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

passed this arbitrarily established age limit, first, because most men do not recognize this limit in their statistics, or record only those cases in which a reduction has been attempted; and again, because others report only those cases in which they believe they have accomplished either a reduction or a transposition.

The bloodless operation is clearly not very promising where patients have passed this age limit, and, while reduction can be accomplished by the Hoffa-Lorenz open operation in practically every case, it has very serious objections, among which may be mentioned a considerable mortality, prolonged illness, a necessity for still longer after-treatment and a functional result which usually is very unsatisfactory.

Thus Hoffa in the fourth edition of his "Orthopedic Surgery" reports 250 cases treated by the open method. He secured reduction in every case, but had a mortality of six. Anatomically the results were good in all of his cases, no reluxation having taken place, but none of his cases were functionally perfect and a large percentage of them resulted in complete ankylosis. At the present time I believe that we are safe in saying that an attempt at reduction by open operation is never justifiable in double dislocation of the hip.

The late Prof. Julius Wolf of Berlin once expressed himself very tersely in regard to the Hoffa-Lorenz open operation in double dislocation of the hip. "Before the operation," he said, "the children walk like ducks and after the operation they walk like lame ducks."

In single dislocations the condition is somewhat different, however. If a patient has great trouble with a single dislocated hip and reduction cannot be secured by the bloodless method one is often justified in resorting to the open operation, because in this condition, even if ankylosis of one hip in good position results, the patient's endurance becomes greatly improved. Thus, for instance, I had two patients, each with double dislocations; in each I was able to reduce one hip by the bloodless method, but, failing to reduce the second hip by this method, I subsequently accomplished reduction by the open method. In one of these hips I secured an excellent anatomic result with very good motion and in the other a fair anatomic result with a fair degree of motion.

As stated above, statistics on this subject vary greatly, because different standards are adopted. Hoffa told me personally, shortly before his death, that he had treated over 600 patients by the functional weight-bearing method of Lorenz; that in single dislocations in patients between the ages of 2 and 8 he had satisfactory anatomic and functional results in 70 per cent. of his cases; that in double dislocations in patients between the ages of 2 and 6 he had, however, only 20 per cent. of permanent functional and anatomic results; that among those patients who came under treatment later in life the percentage of successful cases became rapidly less as the patients became older. It will be observed that this latter statement corresponds fully with my own experience.

Lorenz,[1] in the last report which I was able to obtain, gives the following statistics: In 364 cases of unilateral dislocation, 218 gave anatomically good results, 127 subspinal position, 19 showed lateral apposition. Of 158 bilateral dislocations, 70 showed good anatomic results, 19 showed subspinal position on both sides, 7 lateral apposition on both sides, 49 good results on one side, the other side subspinal, 4 cases one side anatomic replacement, the other side lateral apposition. Taking all hips together, gives 680, with 358, or 53 per cent. of good results. Or in single dislocations, out of 364, 218, or 60 per cent. anatomically and functionally good results, and in the bilateral form of 158 cases, 70, or 44 per cent. gave anatomically and functionally good results. Of course, to these should be added the cases in which he accomplished lateral apposition or subspinal position. Unless the case is definitely reported, however, there is no way of telling whether such transpositions have actually benefited the patients.

Hoffa states definitely that some of his cases were worse after the transposition than before. This low percentage of satisfactory results may be accounted for in a measure by the fact that Lorenz gives his age limit as 9 to 10 years in unilateral and 7 to 8 years in bilateral dislocations. He gives it as his opinion that the third year is the most favorable.

TABLE SHOWING RESULTS OF TREATMENT OF HIP-JOINT DISLOCATIONS

Total Patients:	
Examined	37
Rejected	3
Declined treatment	3
Treated	31
Above Age Limit:	
Treated	5
With single dislocation, treated	3
With single dislocation, secured anterior transposition	1
With single dislocation, secured functional improvement	1
With single dislocation, failed in securing reduction. Condition unchanged	2
Double dislocation. Treated	4
Double dislocation failed in securing reduction. Condition unchanged	4
Total Patients Below Age Limit:	
Treated	26
With single dislocation. Treated	17
With single dislocation, secured reduction	17
With single dislocation, secured good anatomical result	16
With single dislocation secured good functional result	16
With single dislocation, secured good anatomic and functional result	16
Still in cast. Hip in position when last examined	1
With double dislocation. Total number of hips treated	18
With double dislocation, secured reduction by bloodless method in	14
With double dislocation, secured good anatomic result after bloodless reduction	9
With double dislocation, secured good functional result after bloodless reduction	9
With double dislocation, still in cast. Hips in position when last examined	4
With double dislocation, failed in securing reduction. Condition unchanged	2
Secured reduction by open operation	2
Secured good anatomic result with fair degree of motion. Following open operation	1
Secured fair anatomic result with fair degree of motion. Following open operation	1
Secured reduction position perfect when cast was removed 18 months after reduction. On examining 6 months later, reluxated. Reduced again. Has reluxated again	1

In this country Lorenz was evidently less successful. Thus Ridlon,[2] in 29 hips subsequently examined by him, gave it as his opinion that he found the following results: 2 perfect replacements, 1 apparent replacement, 6 supracondyloid displacements, 13 anterior transpositions and 7 complete failures, or perfect results in only one-tenth of the cases.

Blencke[3] gives in 60 per cent. of all cases good functional results.

My own statistics are the following: I have treated 26 patients below the age limit. Of this number 17 had single dislocations. Reduction was secured in all of these. Sixteen have been out of their casts for a year or more and all of these have good, permanent anatomic and functional results, making 100 per cent. of permanent cures in cases with single dislocations of the hip below the age of 8 years. Nine cases, or 18 hips, with

1. Lorenz: Am. Jour. Orthop. Surg., 1904-5.

2. Ridlon, J.: The Ultimate Results of the Bloodless Replacements of Congenitally Dislocated Hips, THE JOURNAL A. M. A., April 16 and 23, 1904, pp. 1011, 1063.

3. Blencke: Ztschr. Orthop., Chir., xv, Nos. 2-4.

double dislocations in patients below the age of 6 were treated. Reduction was secured in 14 hips by the bloodless method. Ten of these hips have been out of the cast a year or more. Nine of the 10 have good functional, anatomic results. One reluxated after the cast was removed. I failed to secure reduction by the bloodless method four times; one patient both hips, two patients one hip each. The latter two were reduced by the open operation and good anatomic and functional results in one case and fair results in the other were secured. In other words, in 14 double hip dislocations below the age of 6, who have been discharged from treatment, good anatomic and functional results were secured in 10, or 71 per cent. The four still in casts were in good position when last examined. They have not, however, been counted in the percentage. The complete table will appear in the published paper.

While the number treated is relatively small, I believe I have had a sufficient number of them, and the time that has elapsed since their treatment was completed is long enough to justify some conclusions. The two assertions that can be made without fear of contradiction are fortunately the two that are of the greatest importance to the patient as well as to the general practitioner. They are, first, that no case should go undiagnosed beyond the age of 3; second, that if properly treated at this age the great majority of dislocations can be successfully reduced and can be given good anatomic and functional results. By a good anatomic and functional result I mean that the head should be permanently opposite the Y cartilage, that the patient should have normal endurance and that his gait should be so nearly perfect that the ordinary observer cannot even detect a peculiarity in the patient's walk.

I wish now briefly to call attention to a few errors that are commonly made in this work. They are extremely costly errors, as they are, I believe, the cause for the great number of serious traumatisms, reluxations and anterior transpositions. It will be observed that in my statistics I have only one anterior transposition, and that in a girl 11 years of age. These errors can be avoided by observing the following directions:

1. Too great force should never be applied, especially not suddenly. In children below the age limit it is rarely necessary, and in children above the age limit there is very considerable danger of doing more harm than good. It is, however, possible that my failures in securing successful reductions in children above the age limit may be attributed to my unwillingness to use excessive force.

2. The reduction should be accomplished by bringing the head over the posterior rim of the acetabulum rather than bringing it around the lower border. This latter method is apt to be adopted if bringing it over the posterior rim proves to be difficult. I am sure it is one of the principal causes for the great number of anterior transpositions and also for the considerable number of failures in the hands of some operators. I believe that many of these hips have been considered reduced, when, as a matter of fact, the capsule has just been pushed in front of the head, resulting in a transposition without a reduction. If this takes place it is quite impossible for a new joint to be formed, because a portion of the capsule intervenes between the head and the acetabulum, preventing the development of the cotyloid ligament. These pseudoreductions are very deceiving, because the operator experiences the peculiar shock of the head slipping anteriorly, and because a fulness appears in the groin and the thigh becomes lengthened, as shown by the tenseness of the hamstring muscles.

3. When reduction is once accomplished, the hip should never be intentionally reluxated. This is an error that is very commonly made by even the most experienced operators. I believe that it increases the difficulty of retaining the head very greatly, because it gives the hip reluxation habit. Any farmer would know better than to drive a cow over a fence twelve times, in order to teach her to stay in the pasture.

4. The hamstring tendons should not be stretched at the time of reduction. Their action is fully as important in holding the head opposite the Y cartilage as is the subsequent weight bearing. Besides, the tenseness of the hamstring muscles is a very valuable sign for the first couple of weeks, as it is almost positive proof that the hip has not reluxated. Besides this overstretching of the hamstring muscles is entirely unnecessary, and being an additional trauma, is dangerous and harmful. If these little patients are encouraged to use their limbs as soon as possible, they will always get their legs straight long before the casts are removed and there will be much less likelihood of injuring the vessels and nerves.

5. The cast should be applied over stockinette instead of glazed cotton. If the bony prominences are protected by a little felt or quilted gauze this will be much more comfortable than cotton padding. If stockinette is used the head can be held so firmly that it will not move even a quarter of an inch. It can thus be kept opposite the Y cartilage until the capsule has had time to shrink and until the cotyloid ligament has had time to develop. In my last twenty-five cases I have used this material and in not a single case did reluxation take place while the hip was thus encased.

6. The cast should be applied with the thighs abducted to a right angle and flexed to a right angle, and it should be left in place for a year from the time of reduction with only one change of cast. In recent years some of the best operators have been in the habit of removing the cast in a relatively short time. Thus Hoffa has advised immobilizing the joint from fourteen to sixteen weeks. I believe this accounts in a large measure for his small percentage of permanent cures in double dislocations of the hip. In a large percentage of cases this period is not sufficiently long to permit proper shrinkage of the capsule and proper development of the cotyloid cartilage. I believe that the development of the cotyloid cartilage is the most important factor in the permanency of the reduction.

I am confident that if these directions are followed the percentage of cures will be much greater in the future than it has been in the past.

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ABSTRACT OF DISCUSSION

DR. A. J. GILLETTE, St. Paul, Minn.: I think that the term functional result does not convey to one who has not treated these patients and followed them up the real benefit which is obtained. A functional result is one in which the patient is pretty well satisfied, but the doctor is not. In other words, the limbs are very useful, but anatomically they are not perfect. So that when you take into consideration the perfect results Dr. Ochsner has and then the functional result, he has done exceedingly well.

With regard to the amount of force to be used, I notice that he did not believe that we should resort to very severe manipulation. I am getting bolder and I am getting a little more enthusiastic each time, and I am sure I have put into place some hips lately which I would not have operated on a few years ago. Of course, it is possible to produce a fracture. It has occurred in the hands of very good men, and there may occur paralysis. Even if paralysis occurs after manipulation it is only traumatic and will soon clear up. At least, it has done so in my cases. I think that we should attempt to reduce these hips, and, if necessary, use a great deal of force.

I think we should perform the bloody operation on more patients than we do. There are so many reasons why we do not get the hip into position that I will not enumerate them now. If you can get the head of the bone into position, and there is a twist in the neck of the femur, reduce the dislocation and perform a subtrochanteric osteotomy to bring the thigh in a good position later. Supposing it is necessary to do a bloody operation, do so. If the result should happen to be an ankylosed hip, that is not so bad, if you have

the head in position. It is wonderful how much better these cases are than those which are not reduced. The patients can walk and get about better, look better and feel better. They are free from pain or discomfort of any kind, simply because there develops a tremendous amount of compensatory motion in the sacro-iliac joint.

Dr. Ochsner says that he does not believe in stretching the hamstring muscles, and he gets good anatomic results, yet practical experience tells me something else. Frequently when I get the head of the bone in the socket and then attempt to stretch the hamstring muscles, the head slips out. Therefore I do not see any reason why we should not stretch these muscles. I know I have made the mistake of using too much padding. Another thing about which I am pretty positive is that we are leaving these casts on too long. We all know that we immobilize a joint which is not diseased for a long time, say six or eight months, the muscles and ligaments about the joint become lax and loose and one can sometimes partially dislocate a knee without the use of an anesthetic after too long use of plaster of Paris. Nearly all the heads of the bones slip out after casts have been removed, and that reminds me that many times we see these cases complicated by rickets. I had one patient come to me, and I know that there was not a dislocation present. But as the patient had rickets, I treated that condition and after six months the people came to me with the child limping, and the limp was due to a dislocation which was not present at the first visits. I wondered whether in all these cases the dislocation might be due to an intrauterine rickets. Of course, rickets is due to malnutrition, intrauterine as well as extrauterine, and therefore the after-treatment should include proper feeding. In several instances I had to treat the rickets before attempting reduction. Most of these cases of congenital dislocation of the hip present some evidences of rickets.

DR. J. P. LORD, Omaha: My experience in the treatment of congenital misplacements includes about thirty cases, and the time is commensurate with that of the history of this treatment, that is, since 1890. The treatment I employed has been all of the varieties that have been recommended. In several of my earlier cases, I think about six, I used the open treatment. My experience was that of others, and in the ten years following earlier experience, that method was abandoned. Then my methods were practically those used by Lorenz, with about the results that others reported who have used that method. For the last two years I have been using the method as recommended by Bradford, of Boston. He uses a mechanical device for applying direct force in effecting a reduction of the head of the bone, forcing it down into the acetabulum. I think this method preferable, because it does not produce the amount of traumatism that these more or less blind manipulative methods that are used for stretching the parts in every direction are liable to cause. Having reduced the head of the bone by this method, Dr. Bradford makes a strong point of applying the dressing with the limb not only in abduction, but also in inward rotation, so that the head rests more securely in the acetabulum. Bradford's results have been very much better than hitherto, often as high as 91 per cent. of good functional results. My results also have been confirmatory of Dr. Bradford's experience. This method in addition limits the time of the period of confinement; three months seem ample. I am so thoroughly convinced of the value of this particular procedure of Bradford's that little else seems to be desirable, except in those unusual cases in which there is little to be accomplished by a bloodless procedure and an operation must be performed.

DR. EDWARD H. OCHSNER, Chicago: We must always diagnose congenital dislocation of the hip by the *x*-ray. There is no reason why a diagnosis should not be made in all of these cases, and no patient should be allowed to go beyond the age of three or four without an effort having been made to effect reduction. If a proper effort is made at the proper time, we may be confident of getting much better results than the statistics of the past have led us to believe can be obtained. I believe that we can expect and have a right to expect 90 per cent. of cures in the single dislocations, and 70 per cent. of cures in the double dislocations.

RADIO-ACTIVITY INDUCED BY THE X-RAY

A PRELIMINARY REPORT *

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AND
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Physicists know that certain metals used in experimental work become radio-active while under the direct influence of the *x*-rays. It has been asserted, however, that such activity ceases with the removal of such influence or shortly thereafter. The fact that emanations proceed from radium or radium-salts, by which substances exposed to them become radio-active, is well known.

The physical similarity between the rays emitted by the *x*-ray tube and the Becquerel rays, at least the similarity between the *x*-rays and the beta rays emitted from radium, their penetrating power, their phosphorescent action, their action on photographic plates in black paper and plate-holders, their action in causing air to become conductive for electricity—all these phenomena made the existence also of a similarity between the nature of these rays seem plausible to us, and therefore we began experiments by which we found that radio-activity could not only be induced in metals or other substances while under the influence of the *x*-rays, but could, like that from radium, be retained by these substances for a certain length of time, the induced activity gradually disappearing just as the induced radio-activity by radium and actinium disappears. We think we are able to demonstrate that we can store up *x*-rays or a part of them and make use of them after they have been long removed from the tube from which they were derived.

PHOTOGRAPHIC EXPERIMENTS

For our experiments we used uniformly 14½ amperes and 110 volts in the primary, 25 milliamperes in the secondary coil, a distance of 30 cm. from the substance to the tube and fifteen minutes' exposure. The tubes used were hard tubes and kept as nearly as possible of the same vacuum.

EXPERIMENT 1.—The following liquids were used: Liquid A, glycerin dilutions. Liquid B, quinin solutions. Liquid C. quinin and glycerin solutions. Liquid D, a suspension of platinum cyanid of barium in Liquid C.

These four substances were exposed in open Petri dishes to the direct influence of the rays and then put in a non-conductive material. After this they were exposed to highly sensitive trichromatic photographic plates in black paper, and as an object for the purpose we used safety razor blades. After three hours' exposure to the plate and one minute development in a normal developer, we found A negative; plate not affected; B gave clear definition of the razor blades; C and D gave very clear definition.

EXPERIMENT 2.—The same substances were again immediately exposed for twelve hours to photographic plates, which were developed for one minute, resulting in very good definition in all cases.

EXPERIMENT 3.—A portion of C and D were diluted in the proportion of 15 to 85, then exposed for fifteen minutes to the rays and for twelve hours to the plates. C gave very good definition; D had no effect on the plate.

* These experiments have been conducted in the *x*-ray laboratory of the Michael Reese Hospital and materials for the physiologic tests and experiments have been furnished by the kindness of the institution.

EXPERIMENT 4.—C and D were exposed to the *x*-rays and after exposure diluted, 15 to 85, then for twelve hours exposed to the plates. Both plates were unaffected.

EXPERIMENT 5.—A, B, C and D were, forty-eight hours after exposure to the *x*-rays, again exposed to the photographic plate and found negative.

EXPERIMENT 6.—Eight other substances were exposed to the *x*-rays under similar conditions, but all were found negative in respect to their photographic action.

EXPERIMENT 7.—B and C were exposed for thirty minutes to the *x*-rays, and twenty-four hours after removal from the influence of the *x*-rays were still found to possess positive action on the photographic plates; that is to say, the razor plates still had good visible definition.

A, B, C and D were examined concerning their action on the platinum cyanid of barium screen, and at least C and D had, after long observation, a phosphorescent action.

EXPERIMENT 8.—After exposure to *x*-rays, 20 minims of C were injected into a guinea-pig. The pig was then exposed for twelve hours to a photographic plate; the trunk and skeleton parts of the feet were to be seen in a good outline on the plate and the plate as a whole was affected. The pig was found dead and already rigid. This experiment proves the penetrating power of the induced rays.

CONCLUSIONS

1. By exposing certain substances to the direct rays we are able to induce in these substances:

A. Rays which have a decided action on the photographic plate held in black paper and plate-holder.

B. Rays which have a penetrating power.

C. Rays which have a fluorescent action on the barium-platino cyanid screen.

2. These properties remain in these substances at least twenty-four to thirty hours and gradually disappear.

3. These properties have greater strength in B, C and D than in A.

4. These properties are present in a degree when these substances undergo dilution before their exposure to the *x*-rays.

5. These properties disappear at once if the substance is diluted after exposure to the rays.

ANIMAL EXPERIMENTS

Of equally great interest, revealing still other unknown peculiarities of *x*-rays, were our animal experiments made with the substances after they were exposed to the *x*-rays, or, as we prefer to say, after we made them active. It has been long known to one of us that *x*-rays are able to increase the toxicity of certain drugs and alter their physiologic action. A report of this phenomenon will appear in a later contribution; this knowledge helped us to understand the results of our experiments.

The injections were made in the mid-region of the back subcutaneously.

We injected 20 minims of substance A into a guinea-pig prior to its exposure to the *x*-rays; 20 minims into a second pig immediately after direct exposure of the substance to the *x*-rays; 20 minims into a third animal forty-eight hours after exposure of the substance to the *x*-rays or after the substance had lost its activity. This was controlled by the photographic plate. We found that the control Pig 1 remained healthy and began to feed five hours after injection.

Guinea-pig 2 was found to be hypersensitive to touch immediately after injection. A few hours afterward it acted as if sick and refused food and dragged the rear legs; the dragging finally approached a degree of paralysis. After four days the condition gradually improved, the paralysis disappeared and the animal got well.

Guinea-pig 3 died the fourth day. We experienced similar results after injecting other guinea-pigs with 10 minims of B and C before exposure to the *x*-rays, 10 drops after exposure and again 10 drops of the substance which had lost its activity. The control animals remained well whereas the animals injected with the active substances became temporarily sick and paralyzed in the legs, while the animals injected with the substances which had lost their activity died between the third and fourth day.

Pathologic or histologic examination of the place of injection has not yet been made. We have left a great many examinations for the future, but we felt justified in reporting our findings even in this premature stage.

In estimating the value of our findings, importance must be attached to the fact that those rays induced by us may prove of value in combating disease in conditions in which radium or radium emanations have hitherto been of service.

The comparative ease with which we are able to activate great quantities of substances which are at once easy to obtain and cheap, whose activity we shall be able to regulate and graduate in accordance with the length of exposure to *x*-rays and by their known susceptibility, and which we shall be able to use internally by mouth, in baths, in the form of compresses, or possibly hypodermically—all these possibilities give rise to the hope that we may enlarge our armamentarium against sickness, not overlooking the value of the discovery in the chemical field.

We have found that many other chemical substances have a tendency to become radio-active for a few minutes, others hold the radio-activity for considerable time, although this activity is scarcely perceptible with the most sensitive plates.

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BITES FROM COPPERHEAD SNAKES

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In response to the suggestion of Dr. Prentiss Willson,[1] that physicians should report cases of poisoning by copperhead snakes, I will report three cases. The mountains of West Virginia are full of copperhead snakes, and bites by them are frequent, many of which are treated by domestic remedies without calling a physician. The fact that patients generally recover indicates that the wounds are not serious.

To be efficacious, the prophylactic treatment of a snake bite must be immediate. The first thing to do is to grasp the limb on the proximal side, close to the wound and substitute constriction by a handkerchief or cord for the pressure of the fingers as soon as possible. Rapid and shallow stabs with a sharp-pointed penknife should then be made in and about the wound and strong suction applied by the mouth. This method involves the risk of sepsis, not only from the knife, but also from the mouth, which is never aseptic. But it is well to follow the maxim "in a choice between two evils take the less." Free bleeding may be expected to wash the poison from the wound. Snake poison taken into the stomach, even in considerable quantity, is destroyed by the gastric juice, and the amount injected into the tissue by the snake bite is about what would adhere to the point of a needle.

If I can reach the patient very soon after the infliction of the injury, I inject a solution of permanganate of potassium hypodermically in and about the wound. This quickly destroys the virus by its rapid oxidizing action. I avoid the use of whisky, but give full doses of strychnin and aromatic spirits of ammonia.

During the last two summers, I have personally treated three cases of copperhead snake bites. Two were in boys of 3 and 12 years respectively, and one in a girl of 10 years. The boys were bitten on the instep and the girl on the side of the bare ankle by snakes which proved to be of the copperhead species. In the older boy, there was swelling of the foot and leg extending to the knee. In the younger boy and in the girl, the entire leg was swollen to the body. In no case was there any constitutional disturbance. The pulse and temperature were approximately normal. Recovery was rapid, the boys being able to run about as usual in from 3 to 5 days. The girl was in bed for 4 days and on crutches for 10 days.

1. THE JOURNAL A. M. A., Aug. 27, 1910, p. 770.

Special Articles

SYMPOSIUM ON THE TREATMENT OF ACUTE ANTERIOR POLIOMYELITIS

1. TREATMENT OF THE ACUTE STAGE

H. M. McCLANAHAN, A.M., M.D.
OMAHA

The recent literature of this disease has shed much valuable light on its nature, pathology, and clinical manifestations. The treatment of the acute stage has received scant consideration. If we can do nothing to modify the disease, certainly we can do something for the patient, and until specific treatment is discovered it is the duty of the physician to institute proper treatment to meet the indications in the average case.* It is now recognized that this disease is caused by some living poison developed without the body. Evidence is rapidly accumulating that it is not only infectious, but to some degree contagious. Like other infectious diseases—for example, scarlet fever—it varies widely in its clinical manifestations. Some cases are so light during the acute stage that the parents give it no serious thought until paralysis develops. Others are so severe as to simulate cerebrospinal meningitis, or terminate in early fatality by involvement of centers in the medulla. In sporadic cases the nature of the malady is frequently not recognized until the manifestation of paralysis. During an epidemic the nature of the disease may at least be suspected. I firmly believe that if its nature is recognized with the beginning of symptoms, treatment is of value, and I base this statement on the evidence of physicians in this state who have had large experience.

I shall first discuss the subject of treatment in general and then the treatment of certain varieties.

TREATMENT IN GENERAL

Isolation of the patient can do no harm to the individual and may protect others in the family. To my mind it is more important than rigid quarantine. The advice of the family physician is usually accepted, hence if he advises the mother to at once isolate the patient he has adopted the best measure to prevent the extension of the disease to others. If a mistake in diagnosis is made no harm can possibly result. If during local epidemics of this disease, such as prevailed in 1909 in Nebraska and during 1910 in Iowa, physicians everywhere would adopt this course many cases might be saved from exposure.

The physician should realize that he is dealing with a general infection involving all organs, as well as the nervous system, and apply the same general principle of treatment as in other infectious diseases; hence the important principle of treatment is elimination. This includes thorough depurative action on the bowels, the ingestion of a liberal amount of fluid to promote excretion from the kidneys, the use of remedies to stimulate diaphoresis, a liquid nourishing diet and proper temperature and ventilation of the room.

How are we to meet these indications? In the Nebraska epidemic constipation was the rule, diarrhea the rare exception. Strictly speaking this was obstipation, and undoubtedly due to the disturbance of the motor function of the bowels. Men of large experience, as Anderson of Stromsburg, Shidler of York, Shaw of Osceola, and many others with whom I have had correspondence, found this a very difficult symptom to overcome, especially in those cases where vomiting was a symptom. The best remedy is calomel in broken doses, given at frequent intervals, combined with soda. This should be followed by castor oil. It is a clinical fact worth remembering that when a child is vomiting, frequently it will retain castor oil. Even should it vomit, it will not expel all of the remedy. I clearly recall a case in which the child vomited the first two doses of castor oil and retained two subsequent doses.

Enemas are useful and often necessary, but the success of an enema depends in a large measure on the cooperation of the patient. First, an enema of 4 ounces of warm olive oil should be given, and the child encouraged to retain this for an hour or more, then an enema of one quart of soapy water should be given. This is best made by putting one-quarter of a cake of good soap in a pitcher, pouring over it a quart of boiling water and stirring until the water is cooled to body temperature. If this fails it may be followed by an enema of epsom salts, 2 ounces; glycerin, 2 ounces, and warm water sufficient to make 1 pint. After the bowels have been freely moved, they should be kept moving at least twice a day during the acute stage. If the child refuses to drink enough liquid to keep up free elimination from the kidneys, then warm salines by the bowels should be given. To stimulate the skin nothing equals a hot pack. This is also of benefit in the polyneuritic type. Dr. LeGrand Kerr of Brooklyn recommends this as a routine treatment. If properly applied this is agreeable to the child, and it is always important to have the child's voluntary cooperation. A soft, white blanket, lightly wrung out of hot water (if there is evidence of stupor, it should be wrung out of mustard water), is wrapped snugly about the child. A dry blanket should be wrapped over this—not a muslin sheet which absorbs water. The child should be encouraged to drink while in the pack. I have found that some children will drink freely of grape-juice when they will not take water. When removed from the pack they should be gently rubbed dry and placed between blankets until perspiration has ceased.

The diet during the acute stage includes milk, plain, diluted or modified; buttermilk, broths, and, if there is much gas, some of the modified cereals, sometimes a poached egg, toast when properly made and fruit juices. Toast to be easily digested should be made from bread well dried, slices cut thin and heated through.

The fever seldom requires special attention, and when it does, sponging or a cool enema most safely meets the indication. Coal-tar derivatives should be avoided entirely.

As a routine treatment, I wish to recommend the use of hexamethylenamin (urotropin). This was suggested by Dr. Dana in an article appearing in THE JOURNAL about two years ago, based on the fact that Cushing of Baltimore had determined that this remedy when administered could be detected in the cerebrospinal fluid. I know of no objection to its use. It is generally well tolerated by the stomach. I have used it in a few cases and recommended it in a number. Dr. Adams of Florence, Nebraska, has employed this in twelve consecutive cases without mortality. I personally saw some of these patients. The rule was to give two grains every two hours during the acute stage, or, more definitely, during the first two or three days.

TREATMENT OF CERTAIN TYPES

Certain types of the disease require special consideration; first, the cerebral type. By this I mean cases beginning in a stormy way with fever, delirium or stupor,

muscular rigidity, etc. It usually happens that these symptoms subside in two or three days, and if the physician has called it cerebrospinal meningitis he begins to doubt his diagnosis. Lumbar puncture is now recognized as the only positive method of early diagnosis, but I wish to speak of it here as a therapeutic measure. Dr. Adams has had four of these cases and in every one there was relief of symptoms following the puncture. I saw two of them and can verify his statement. In these cases, also, the ice-cap is undoubtedly of benefit.

The polyneuritic type certainly requires special attention. Therapeutic nihilism will not do; the patient must be relieved. I have known of instances in which the screams of the child could be heard across the street. The pain is usually most intense in the back and legs. There is usually cutaneous hyperesthesia, so that even the weight of the bed-clothes gives pain and the walking of the attendant in the room hurts the child. A limited number will require the hypodermic use of morphin, but this is recommended only in the severe cases. Relief can often be attained by the use of a suppository. The one that has served my purpose best is as follows: Powdered opium gr. ½, extract of belladonna gr. 1/8, sodium salicylate gr. 5, oil of theobroma enough for one suppository. One suppository is to be inserted every three hours until relief is attained. Here again the hot pack, as above described, will sometimes give relief. When the stomach will retain it, sodium salicylate is of benefit. In some cases the pain continues beyond the acute stage. In one little girl the severe pain in the back persisted for about three weeks. Dr. Shidler of York has reported two cases in which lumbar puncture gave notable relief.

MANAGEMENT OF COMPLICATIONS

The mortality in this disease is chiefly from the involvement on the medulla, leading to respiratory failure. I think it is well to remember that this complication will occur in any type of the disease; hence such symptoms as shortness of breath, pallor of the skin with slight cyanosis of the lips, unwillingness to talk and an anxious countenance, should warn the attendant of approaching danger. In the presence of these symptoms what can be done? I have personally seen two cases that terminated fatally in spite of every effort. In all these cases the physician should be on the alert. It has occurred to me that oxygen might be of benefit, although I have no personal experience in its use in these cases. If I should again see a case of this type, however, I would do a lumbar puncture, on the theory that the bulbar paralysis might be due to pressure and that the withdrawal of fluid would tend to relieve this pressure. One case was reported to me, in which the child was taken out of doors on a cot with benefit. There is no evidence that strychnin, nitroglycerin or digitalis are of benefit.

468 Brandeis Building.

2. TREATMENT FROM THE NEUROLOGIST'S VIEWPOINT

B. SACHS, M.D.
NEW YORK

The study of recent epidemics of infantile spinal paralysis, particularly of the New York epidemic of 1907, has led to a modification of the prevailing conception of the disease. Its infectious origin has been known for the past fifteen years or more[1] but not until recently have we realized that the infectious process may involve (in some instances) the greater part of the central nervous system from the cortex of the brain to the lumbar ganglia. In the majority of cases we may still consider it an anterior poliomyelitis; in other instances it will be more correct to speak of it as an infectious meningo-encephalomyelitis.[2]

Our views as to the treatment of the disease have also undergone a radical change. It will not do for the physician to sit by idly and state that there is "little to be done"—as was the fashion not so many years ago. The disease calls for patient and intelligent treatment with a certain prospect of reward. After the subsidence of the acute stage[3] the practitioner is face to face with the problem of what to do for the paralyzed limbs or muscles. Although this paralysis is due to an affection of the spinal cord, it is well not to attempt treatment of this organ. So far as we are at all able to influence the spinal lesion itself, the enforced rest in bed, and, in the earlier stages, the application of an ice-bag, will help as much or as little as any other measure. It is at least certain that these simple measures will do no harm. Counter-irritation is both painful and unnecessary, and the avoidance of pain in the case of a disease that is of itself painful and distressing is a point that we ought not to overlook. Counter-irritation over the spine is contraindicated because it will interfere with the quiet rest of the patient on the back; because of the danger of the formation of bedsores; and, lastly, because it is more than doubtful whether it can do any good. Galvanization of the spine in the hands of a careful practitioner may do no harm. It is more than doubtful whether it can do any good, and no one as yet has shown that if a current be applied to the skin over the spine any of it actually reaches the spinal cord substance itself. All therapeutic efforts should be concentrated on the treatment of the paralyzed groups of muscles, and in order to treat these with some show of intelligence it is above all necessary to determine which muscles or groups of muscles are especially involved. The entire aim of treatment is mildly to stimulate the nerves and to exercise in one way or another muscles which cannot be exercised by the will. This can be done by electricity, by massage, and by active and passive exercises.

ELECTRIC TREATMENT

First, as to the proper form of electric treatment: It is the rule in paralysis due to poliomyelitis that the nerves and muscles exhibit some form of the reaction of degeneration. This implies that in all but the mildest cases the nerves and muscles will not respond to the faradic current but will contract on galvanic stimulation. Muscular exercise is the chief aim in treatment, and for that reason one must follow the simple rule that in treating the paralyzed muscles that form of current is to be used which gives the best contraction with currents of moderate strength.. Thus, if it is found that the contraction with the negative pole (KCC) is obtained with weaker currents than is the contraction with the positive pole (ACC), then the attempt should be made to exercise the muscles by the use of the negative pole, the other pole being placed at some distance from the paralyzed group of muscles. Currents of moderate strength should be employed, and the making

1. Sachs: Nervous Diseases of Children, ed. 1, 1895.

2. The Report of the Collective Investigation Committee on the New York Epidemic of 1907, Jour. Nerv. and Ment. Dis., Monograph Series VI. I recommend a careful study of the entire report to all physicians interested in the subject. The final section on treament is full of helpful suggestions. The German translation of the report has just been published.

3. Let me hope that my colleague in this symposium has recommended that during this stage the treatment be similar to that employed at the onset of other acute infectious diseases.

and breaking of the current should be done slowly, so as to give the muscle time for deliberate contraction. Moreover, it is well in the majority of instances to apply the stimulating pole over the belly of the muscle unless it has been previously determined that the muscles can be excited from a motor nerve point. Do not merely pass the pole up and down the limb, but determine exactly how the muscles can be properly moved and apply the pole to those points. It is needless to say that this cannot be properly done unless the person doing it has had some satisfactory training in the use of electric instruments. If at all possible, the physician or his assistant should give this treatment, particularly in the earlier stages of poliomyelitis, and it should not be left in the hands of a trained nurse unless that person is specially qualified to give that treatment. In almost every case of poliomyelitis some groups of muscles are more completely paralyzed than others; some of them can be excited from the motor nerve point, others cannot. Whenever an entire group of muscles can be moved by applying the current over a motor-nerve point—the peroneal, for instance—advantage should be taken of this for the simple reason that a number of muscles can be exercised at one and the same time. Whether the paralysis has involved the muscles of the upper or the lower extremities, or of the abdomen or of the back, the same rules as to electric treatment obtain in all cases. The faradic current, except as a mild nerve stimulant, is of little benefit, particularly in the graver cases in which both nerves and muscles give no faradic response. It may be suggested, however, that an examination for diagnostic purposes with the faradic current be made from time to time, and as soon as the muscles and nerves in the process of recovery begin to respond to the faradic current, this current may be used conjointly with the galvanic.

In those rarer instances in which the lesion is so slight that the faradic response of nerves and muscles has never been entirely lost, the faradic and galvanic currents may be employed at alternate sittings. The matter of electric treatment can hardly be overdone. It should be begun about one week after the subsidence of the febrile period and should be continued daily until full recovery has set in or a chronic stage has been reached, during which exercising of the muscles no longer results in further improvement.

MASSAGE

The paralyzed limbs of a poliomyelitic patient exhibit a distinct tendency to wasting and to an impairment of the peripheral circulation. These conditions can be improved, if not overcome, by proper massage. A thorough kneading of the muscles will help to improve the circulation in the peripheral parts and at the same time will serve to counteract the tendency to contracture which is developed at an early period of the disease in many instances. A deep massage of the parts is in order, but the person giving the treatment should be cautioned not to add insult to injury by bearing down too heavily on the nerves in exposed areas. Thus the ulnar and musculospiral nerves, the sciatic, the peroneal and the posterior tibial, should not be manipulated with too much force. In the earlier stages of poliomyelitis these nerves are apt to be sensitive and I have known much harm to be done by violent massage. I would urge that every practitioner arrange to witness the massage as given by the person intrusted with it, and to caution against any excessive measures. Many a case of sciatic and peroneal neuritis might have been avoided if this precaution had been taken.

PASSIVE AND ACTIVE EXERCISE

I wish to lay especial stress on the importance of passive and active exercises. In the earlier paralytic stage passive exercises are of the greatest importance because in this way, and perhaps in this way only, can a tolerable nutrition of the paralyzed muscles be maintained. Moreover, early contractures can be partially counteracted. This tendency to contractures is in many instances the most serious feature of the disease and is responsible for subsequent deformities. In the investigation committee's report[2] Dr. Jelliffe has specially urged the value of hot baths (100 F.), and of giving the first passive exercises when the patient is lying in the tub. I fully subscribe to this suggestion and would insist that the nurse or attendant in charge of the patient be asked to carry the child carefully into the bath, and to have the passive exercises given in the tub.

Directly the paralysis has begun to recede, the time has come for active exercises. While the paralysis comes on with great suddenness, the improvement in the use of the muscles as a rule sets in very slowly and deliberately. There is no task more important for the physician in charge of poliomyelitis cases than to recognize the return of power to one or the other muscles or groups of muscles at the earliest possible moment, to fasten on this return, and to encourage from small beginnings the further development of muscular power. In the case of paralysis of the upper extremities, finger exercises, the grasping movements of the hands, raising of the shoulders, raising of the arms, etc., should be encouraged, and definite periods of the day should be set aside for such movements.[3] If the deep spinal and abdominal muscles are involved the patient should be encouraged to rise from the recumbent posture. At first only one or two attempts of this sort should be made; as the child grows stronger the same movements may be repeated four, five and six times up to the point of fatigue. In the case of the lower extremities, the movement of the toes, the bending of the knee, the raising of the entire leg, may be practiced while the child is still confined to its bed or couch, and as the improvement continues it should be encouraged, first with assistance, and held firmly under the arms, to stand on its feet, to make a few careful steps, and as power returns to the limbs to walk from its bed to a couch, to a chair, finally across the room; but it should not be allowed to walk unsupported until the physician has satisfied himself that the legs will actually carry the body.[4] The tact and good judgment of a physician will be displayed in determining when it is safe to allow such a patient to use its limb or limbs unsupported. Children beyond the age of five, and older persons, may be encouraged to use crutches in getting about. Smaller children may be placed in go-carts, and other devices may be resorted to, in order that weakened muscles may be exerted without detriment to the patient; but unless the muscles are wholly inadequate to the performance of their duties they should not be entirely replaced by mechanical devices.[5] It goes without saying that active exercises can be employed only in those cases in which some groups of muscles have retained considerable power, and I feel satisfied that we shall see a much smaller number of deformed and helplessly paralyzed limbs if these active exercises are properly prescribed in the earlier periods of the disease.

4. No physician would be in danger of following the example of an Eddyite practitioner who insisted that a child with a poliomyelitic leg be put in the middle of the room and be made to stand, with the result of its falling in a heap and fracturing its thigh.

5. It is most important to guard against the development of pes equinus and of genu recurvatum.

ORTHOPEDIC MEASURES

If permanently paralyzed or deformed limbs are the result of an attack of poliomyelitis, orthopedic measures should be freely resorted to. Simple contractures may, no doubt, be overcome by tenotomies, possibly by suitable apparatus, but I would particularly urge that the transplantation of tendons and the shortening of tendons be practiced in those cases in which an improved position of one or both legs could be brought about by such procedures. To a neurologist, the problem of transplantation of tendons is a very simple one. It merely amounts to implanting the tendon of an under-acting muscle into the tendon of an over-acting opponent. Much time is wasted, as a rule, in hoping for a return of tolerably normal conditions. If six months or a year after the onset of poliomyelitis a group of muscles shows considerable wasting, an absolute reaction of degeneration and no return of muscular power, it is useless to hope for spontaneous improvement. The orthopedist should then step in and attempt to correct the mischief done by the disease.

MEDICINAL TREATMENT

No reference has been made to medicinal treatment, for the simple reason that I know of no drug which has the slightest effect on the spinal lesion or on the paralyzed muscles after the acute stage has been passed. While salicylates and mild narcotics will have to be employed in the earlier period of the disease, and even iodids and ergot may be administered in the earlier stages, there is no sufficient reason to administer these drugs in the paralytic and post-paralytic periods. For the relief of neuritic and muscular pains, give a combination of pyramidon, citrate of caffein and aspirin, or aspirin alone, varying the quantities according to the age of the patient. If necessary, codein may be added. I am very certain that injections of strychnin or of arsenic are absolutely useless, though there can be no objection to the use of the ordinary blood and nerve tonics, provided the practitioner keep in mind that he is attempting to improve the general condition of the patient and is not endeavoring directly to effect a change either in the spinal cord lesion or in the paralyzed nerves and muscles.

CONCLUSION

In conclusion, let me insist that intelligent gymnastic exercise of the paralyzed or weakened limbs is the method to which one should pin one's faith, and from personal experience I can state that the physician who directs these exercises intelligently, and who will direct them patiently, will have no reason to regret the time devoted to this good cause. In recent epidemics the disease has been of such varying intensity that we have no right to claim that any case is a hopeless one, and much can be done by properly directed therapeutic efforts.

135 Central Park West.

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3. THE ORTHOPEDIC TREATMENT

JOHN RIDLON, M.D.
CHICAGO

The treatment of anterior poliomyelitis consists of massage, movements, braces and surgery. Massage is used to maintain and restore, at least to some extent, the nutrition of the paralyzed muscles. Electricity is employed for the same purpose, but is in my opinion of very doubtful value.

MOVEMENTS

Passive movements of the joints of the paralyzed part are made by the operator to maintain the normal range of motion and thereby prevent contraction of the unopposed or weakly opposed muscles, and to stretch already contracted muscles and correct recent and mild deformities. Assisted movements are made use of where some strength remains in the paralyzed muscles, but too little for the patient unassisted to put the joint through its full range of motion. Active movements performed by the patient himself have positive curative value, probably greater than any other remedy. Resisted movements are normal active movements of the patient resisted by the operator just sufficiently to bring out the full strength of the patient as he performs each movement.

BRACES AND SPLINTS

Such mechanical appliances as splints and braces are used to prevent the development of contraction deformities, and to enable the patient to use the paralyzed limb more and more normally than in many cases it is possible for him to do without this aid.

SURGERY AND MASSAGE

Surgery is used to correct deformities, to maintain that correction and to assist in the restoration of function and in some cases to eliminate the necessity of braces.

Gentle massage and gentle passive movements may be employed from the time that the diagnosis is made. More vigorous massage and movements should be employed as soon as the sensitiveness of the limbs has passed off, and should be continued daily for years. When it is possible to have a skilled masseur, one should be employed. When it is not possible to have the service of a skilled masseur for a long time, some member of the family should receive from some competent operator at least a few lessons.

Osteopathic treatment, as such, is useless; for osteopathic treatment is to massage what homeopathy once was to regular medicine, a pretense to a reality. Real massage is a real aid. Osteopathy in the treatment of infantile paralysis is a pretense; it is useless, and the employment of the osteopath means the loss of much valuable time.

CONTRACTION DEFORMITIES

In nearly all cases of anterior poliomyelitis contraction deformities develop sooner or later. In most cases, fortunately, it is later, some months after the acute attack with its usual accompaniment of sensitiveness and soreness of the limbs has passed, and when it is comparatively easy with splints or braces to prevent it. But in a few cases contraction deformities, even of severe degree, develop during the first eight or ten days, while the sensitiveness is still so great that it seems a positive cruelty to move the child at all. But if the attending physician allows contraction deformities to develop, whether it be early or late, he should realize fully the responsibility he is taking, and should stand ready to admit that to his neglect of a simple precaution the child must have all the rest of his life more useless limbs than he needed to have. For no orthopedic or surgical treatment can ever make these contracted muscles as good as they might have been had he prevented the development of deformity.

Obviously, then, the first thing to do in the orthopedic treatment of a case of anterior poliomyelitis is to prevent contraction deformity by daily passive movements, if they are sufficient; if they are not sufficient, to put the limb in a plaster cast, or some equally efficient splint,

with all joints in the normal position for standing erect; and to maintain them so until all tendency to contraction deformity has passed, or an efficient brace can be applied.

DETAILS OF BRACES

No practitioner should prescribe a brace unless he can make it himself and modify it from time to time as may be necessary. To require an instrument-maker to measure for, make, fit and apply a brace is equivalent to asking a druggist to put up a bottle of medicine for the treatment of a patient suffering from the diagnosis of pneumonia. If the physician in charge of the case can not measure and make the drawings for the brace he wants, so that any competent mechanic can construct the brace, and then fit and modify the brace without the assistance of the mechanic, he is not competent to carry on the brace treatment and should not attempt to do it.

Here and there an orthopedist can be found sufficiently competent to correct some slight contraction deformities by braces constructed to stretch the shortened muscles, but of these there are few, for in these days most young orthopedists seem to have a greater ambition to perfect themselves in surgery than in mechanics.

As a rule braces should be used only to prevent the development of deformities at joints where the tendency is not great, in joints where the deformity has been fully corrected, and to enable the patient to use the limb more and better than he can use it without the brace.

CONTRAINDICATIONS TO BRACES

If there is no deformity and no tendency to deformity and the patient can use the limb without a brace, then a brace should never be used. A brace should be a help, not a burden. It is greatly to be regretted that the cupidity of some physicians leads them to order braces from surgical instrument makers who give a commission of 25 per cent. on the cost of the brace, for this usually means a costly brace that the physician can neither measure for, fit to the patient nor use intelligently.

INDICATIONS FOR SURGERY

Surgery in the treatment of anterior poliomyelitis may be either "bloodless surgery," that is, the correction of the deformities by great force, stretching and tearing all shortened soft parts that produce joint deformity, the patient of course being fully anesthetized, or operative (bloody) surgery. There is a certain risk, not often appreciated, in the use of great force in the correction of paralytic deformities. For both from non-use and from deficient nutrition arising from the paralysis, the bones grow thin and friable and may be broken before the deformity can be overcome.

These bones when broken sometimes are the source of fat emboli, not infrequently the cause of death. But when a deformity can be safely corrected without a cutting operation it should be so corrected. Then it should be put up in a well-padded and heavy plaster splint and kept in the splint and used for from four to eight months. After that an efficient brace should be worn for years.

When a paralytic deformity cannot be corrected by force alone, it can generally be fully corrected by simple tenotomies and force. When this is done the after treatment should be as before indicated, namely, a well-padded and heavy plaster splint, worn for months while the limb is being used, followed by a brace, for years in most cases, massage and movements. I have seen no better results than this uniformly gives.

TENDON SURGERY

During the past fifteen or twenty years a great many patients with infantile paralysis have been operated on by various and changing methods of tendon-splicing, tendon transplantation, and tendon lengthening. The present view of this work is that the tendon-splicing of fifteen years ago is useless; that the tendon-transplantation of ten years ago is useful in a small and carefully selected lot of cases; that the tendon-lengthening and joint-fixation with permanently buried silk ligatures as practiced during the past five years holds out as yet a promise of better results when well done in carefully selected cases. Yet hardly a week passes that we do not see utter failures as results of operations done by others. As yet it is too soon to say what the ultimate results will be after ten or fifteen years have passed in the cases that now seem to be entirely satisfactory.

Treatment of these patients by nerve grafting is useless.

The resection of flail joints in complete paralysis in order to obtain ankylosis and escape the burden and cost of braces for life is sometimes a success, and sometimes a failure through failure of bone union, probably owing to the impaired nutrition.

PROGNOSIS

Finally, let me say that occasionally a patient with anterior poliomyelitis recovers without paralysis; occasionally a patient but slightly paralyzed recovers from the paralysis; most patients gain from six to eighteen months after the acute attack has passed, and never gain after that in real strength, but may gain in ability to use the limb through orthopedic treatment. In at least a third of the cases there is arrest of the growth of the length of the limb during the whole of the growing period of the child. It has been asserted by Heather Bigg of London that in some cases which have shown a progressive difference in growth of the limbs for several years the paralyzed and shorter limb in a measure overtakes the well limb by a more rapid growth, but this I have not seen, nor has it been mentioned by other writers.

72 Madison Street.

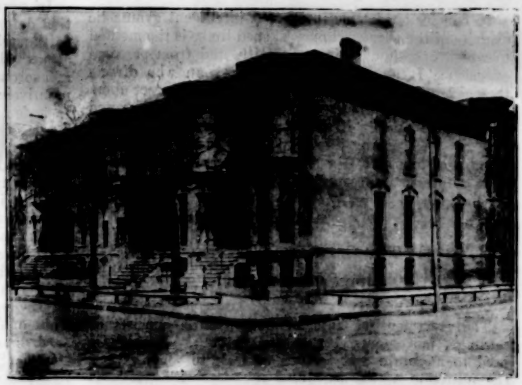

Fig. 1.—This picture shows the property first purchased at the corner of Dearborn Avenue and Indiana Street, containing five houses. The two on the north, or left, of the picture, occupied the site of the present old building.

THE HOME OF THE ASSOCIATION

A BRIEF HISTORY OF ITS MATERIAL PROGRESS AND OF THE GROWTH OF THE ASSOCIATION BUILDING

CHAPTER I. THE FIRST BUILDING

INTRODUCTION

This story, which will be a continued one, relates to the establishment and equipment of a permanent home for the American Medical Association and its JOURNAL. It is a good

Fig. 2.—The three-story and basement building originally erected, and occupied in December, 1903.

story and we feel that every reader of THE JOURNAL will be interested in it.

A short time ago we printed a series of editorial articles detailing certain facts in the history of the Association, its aims and purposes, its progress in organization, and what it has done and is doing for the benefit of the medical profession and for the people. The present series of articles constitutes a brief record of the triumphs of the Association on the material side, and particularly of its efforts to found a permanent home for its material activities.

THE DAYS OF THE TRANSACTIONS

Without a home, an organization, like a man, is not only a wanderer, but is also greatly hampered in usefulness. During the early years of the American Medical Association, when the membership was small and the cost of publishing the Transactions practically exhausted the revenues of the organization, and often more than exhausted them, the Association had no headquarters, except under the Permanent Secretary's hat. Except during the four days of the annual session the Association was practically non-existent. References were made occasionally in presidential addresses to the desirability of a permanent home and headquarters, but for a long time it ended in a desire and a hope.

THE START OF THE JOURNAL

When in 1883 the Association decided to publish a journal, some kind of editorial offices became a necessity, and the establishment and development of a home dates from that period. Dr. N. S. Davis, who was the leader in the establishment of THE JOURNAL, became its first editor, and editorial quarters were opened in his office. And here they remained from the first issue of THE JOURNAL, July 4, 1883, until November 24, 1888, when they were removed to 68 Wabash Avenue. September 1, 1894, in that early wandering period, THE JOURNAL moved to 86 Fifth Avenue, and May 1, 1896, to 61 Market Street. Each of these removes was made necessary by the growth of THE JOURNAL, which necessitated increased space and facilities. The circulation at the latter date had reached nearly 8,000 copies weekly. In 1902 the circulation had leaped to over 25,000 copies weekly.

At the session of that year the trustees reported that the lease on the Market Street property would soon expire, and that sufficient room could not be secured in the building to accommodate the rapidly growing needs of THE JOURNAL. The increasing prosperity of the Association and the enlarged earning capacity of THE JOURNAL justified the trustees in considering the purchase of real estate for a permanent home for the Association, and they were authorized to do so.

THE FIRST BUILDING ERECTED

Accordingly in March, 1902, property was purchased on the northeast corner of Dearborn Avenue and Indiana Street, a few blocks north of the Chicago river and close to the "loop" district, the business center of Chicago. This property, 100 feet on Dearborn Avenue by 80 feet on Indiana street, contained at that time five two-story and basement houses, and

Fig. 3.—The old home of the Association as it is at present, with the added fourth story erected in 1905, together with the remaining houses of the original purchase and the two three-story houses on the east (right side of picture) later purchased to secure additional ground space.

cost $42,000. The property as originally purchased is shown in Figure 1. Two of these houses—those on the north—were torn down and the erection begun of a three-story building, 40 by 80 feet, with high basement, of brick with stone trimmings. This building was completed, equipped and occupied December 1, 1902, and is shown in Figure 2. The cost was about $35,000. In the first four months of 1903 the circulation had reached over 27,000 and before the year was out, on account of the phenomenal growth of THE JOURNAL and its business, it was again crowded for room, and it was necessary to extend the building. An opportunity was given about this time to purchase at an extremely low price—approximately $15,000—the adjoining property on the east, consisting of a lot 40 by 100 feet, containing two three-story and basement houses. The purchase was made in June, 1903. This made the entire ground space owned by the Association 100 by 120 feet. In 1905 the old building was enlarged by the addition of another story and by extending it back 40 feet, completing the building as at present occupied. Thus it had become a four-story building, with a high basement 40 by 120 feet in dimension. It is shown in Figure 3 with the houses on the south and the two last purchased on the east.

THE FIRST BUILDING OUTGROWN

But the circulation of THE JOURNAL did not remain at 27,000. Far from it. In 1909 the number printed had mounted to 55,000 weekly, and the collateral printing and publishing business and the work of the Directory Department, and of the Councils on Medical Education and on Pharmacy and Chemistry, with its chemical laboratory, which had been established meanwhile, had grown in a corresponding manner, and again there was not room enough. And so, bursting through its walls, the business oozed out into one of the adjoining houses. The tenants moved out, additional presses were placed in the basement and the other floors of the house were occupied as offices and by the mailing department. But this was only a temporary makeshift. The cry was still, MORE ROOM!

How that cry was answered will be told in succeeding issues.

THE VALUE OF EHRLICH'S NEW DISCOVERY "606" (DIOXYDIAMIDO-ARSENOBENZOL)

A PRELIMINARY REPORT FROM PERSONAL OBSERVATIONS

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CHICAGO

Originally the expression, "specific therapy" was understood in a purely chemical sense, which is evident from the fact that from olden times the administration of mercury, iodin, etc., was designated as specific therapy. More recently immunotherapy has laid claim to the same designation and has pushed the chemical into the background.

The two forms of treatment may come together in important points, since chemotherapy may also lead to the formation of antibodies, but there are very great differences. In immunotherapy the various antibodies are formed as products of complicated reactions on the part of the animal organism. These antibodies are strictly specific in nature and act exclusively on the respective bacteria or their toxic products. They do not of themselves exert any injurious action on the organism. For this reason the serum therapy represents the ideal of all forms of treatment, in that the protective substances kill the parasites without injuring the body, and therefore every thinking person will give preference to immunotherapy (whether active or passive) whenever it is applicable.

Unfortunately, in contrast to diseases due to bacterial action, in a whole series of infectious diseases the successful formation of antibodies in the required manner is impossible. This is particularly true for diseases produced by protozoa, malarial plasmodia, trypanosomes, piroplasmas and the pathogenic spirochetes. In these diseases the clinical course indicates that the healing reaction of the organism is seriously hindered by peculiarities characteristic of the parasites. In such cases we must attempt to kill the parasites chemically; the possibility of doing this is known. I need only refer to the use of quinin in malaria, mercury and iodin in syphilis and atoxyl in trypanosomiasis.

The substances employed, however, are poisons, and do not, like the antibodies, leave the body unharmed. Hence the importance of the careful, detailed study to which Ehrlich[1] has devoted himself for a number of years. Ehrlich has found that certain chemical substances are particularly attracted to certain parasites; they are parasitotropic. Being poisons and capable of injuring the cells of organs, these substances are also organotropic, and their curative value in parasitic diseases depends on the existence of a proper relation between the parasitotropic and organotropic properties.

After many experiments in various directions, Ehrlich has finally succeeded in preparing a substance for the cure of syphilis in which, if it is used in proper dosage, the parasitotropic power sufficiently overshadows the organotropic to make the latter a negligible quantity. He has come to the conclusion, after years of animal experimentation that the most effective treatment consists in administering a single dose of such strength that it sterilizes the animal completely by destroying all the parasites in the organs, and thus produces a complete healing or cure. This act of sterilization with one dose Ehrlich designates as "therapia sterilisans magna."

The chemical "606" was first tried in Professor Doctor Konrad Alt's[2] clinic in Uchtspringe (Altmark) in September, 1909, by Dr. Hoppe. Twenty-three patients were treated, mostly syphilitic paralytics. The dose employed was 0.3 gm. The arsenic was eliminated slowly and found in the urine as late as the tenth day. Professor Alt asked Schrieber of the Altstädtische Krankenhaus in Magdeburg to try the remedy in recent syphilitics; twenty-seven patients so treated improved with astounding rapidity; the dose used, however, was still only 0.3 gm., half the quantity now given. Wechselmann[3] was the next to report, June 22, 1910. He gave 0.45 gm. to women and 0.6 gm. to men. At present Wechselmann has a record of the largest number of patients treated, something over 900.

The Virchow Krankenhaus in Berlin offers the largest field for experimentation. I can testify to the authenticity of the statement of Dr. Siesskind,[4] Wechselmann's first assistant, that spirochetes begin to disappear in from eighteen to twenty-four hours after injection. Here I saw at least seven babies that had been treated; the average age was ten days; the patients had macular eruptions, fissures and mucous patches. All showed a wonderful improvement in four or five

1. Ztschr. f. ärztl. Fortbildung, January, 1909, No. 23, p. 1.
2. München. med. Wchnschr., March 15, 1910, p. 561.
3. Berl. klin. Wchnschr., July 4, 1910, p. 1261.
4. Personal observation.

days. Taege[5] has treated a syphilitic infant by injecting the mother; both improved. In 100 gm. of the mother's milk no trace of organic arsenic and only a trace of inorganic arsenic could be found. He concludes that the infant was influenced, not by arsenobenzol, but by endotoxins. The substance has been given to mothers while the fetus was yet in utero without either producing death or causing abortion.

The results in secondary and tertiary lesions were equally brilliant. Wechselmann asserts that there is an increase in body weight. This is certainly true of the old cases in which there were tertiary manifestations; however, it was necessary in some refractory cases to give a second injection, which may have been due in part to the method of administration. He offers the explanation that the spirochetes may be stored up in the cutaneous, glandular, muscular or osseous tissues, and later find their way into the blood-stream. He showed several patients with syphilitic periostitis in whom the pain disappeared over night by crisis, as it were.

Lesser[6] in the Charité, while not having such an abundance of material, has handled his cases excellently. Up to the present time, he has treated 160 cases. I saw one baby three weeks old in which the cutaneous lesions disappeared in five days. Here also a large gumma of the tongue had completely healed in a remarkably short time. One patient with malignant syphilis with cerebral symptoms, in whom no cure was possible, nevertheless improved visibly. In each of his cases, Lesser has resorted to only one injection. This, I think, is due in a large measure to the technic that is used. It is a modification of Alt's, and was judged to be the best by the numerous physicians who were in daily attendance. It is the technic that I am employing, not only on my patients, but also on the patients who were referred to me by Dr. Ehrlich for treatment. A detailed description of the technic will be found below.

A. Neisser[8] has treated 126 patients. He asserts that in the total of 2,500 patients treated with "606," at the time of his writing, not a single serious organic disturbance occurred which could be definitely attributed to the remedy. Its effect surpasses anything that has been used, even mercury and iodin. Like Lesser, he uses a solution that is as nearly neutral as possible; hence he never saw instances of severe pain. He says that the action of a neutral solution seems to be slower and more prolonged. H. Isaac[7] from the old Lassar clinic says that there is an incomparable, often rapid, and thorough action of the remedy on spirochetes observable and a prompt absorption of pathologic-anatomic changes produced by them; he finds that lesions on the mucous membrane are most rapidly benefited. From all the prominent clinics in Europe, most astonishing reports are published.

The specific has been tried only in a few cases of parasyphilis. In a limited number of tabetic cases with girdle pains, etc., the relief has been prompt, but this, in the absence of a positive Wassermann, may have been due more or less to suggestion.

TECHNIC

The surprisingly large number of different technics is indeed confusing, as each clinician seems to be endeavoring to attach his own special method to Ehrlich's discovery. The following are references to a few methods, all of which I have seen used: those of Alt and Hoppe,[2] Wechselmann and Lange,[3] Michaelis,[4] Kromayer,[9] and the intravenous method of E. Schreiber and J. Hoppe.[10] I shall describe, however, only the technic of Lesser for the following reasons: 1. The substance is the most easily kept sterile. 2. The method is the simplest to carry out. 3. It is the most lasting in its effects and most efficient in its results.

LESSER'S METHOD

Take a graduated cylinder with ground glass stopper, in which there are about one dozen glass pearls to assist in mixing. Add "606" salt; immediately add 15 c.c. hot water, shake vigorously until every particle of the salt is dissolved; then add 2 c.c. normal sodium hydrate (NaOH) solution; a precipitate occurs. Then continue to add sodium hydrate solution in very small quantity, shaking vigorously after each addition, until the solution begins to clear; then drop by drop, until we have a clear solution. This should be neutral; if the cylinder does not contain 20 c.c. of solution, sterile water is added up to that amount. Then 10 c.c. of this solution is injected deep into the buttocks on either side, always taking care to cleanse the parts with soap, water and iodin.

In every instance patients should be sent to the hospital for treatment, and care should be taken that they rest for one-half hour after the injection.

Ehrlich lays great stress on the fact that no patient who has ocular disease involving the fundus, cardiac or kidney disease, should receive any of the specific.

Neisser[8] reports that the injection did not produce fever in non-syphilitics; the temperature rise in syphilitics (general reaction) is attributed to endotoxins liberated from the killed spirochetes. Vomiting occurred during fever occasionally. The vomitus was examined in four cases and never contained arsenic.

In three cases Neisser[8] saw erythematous eruptions, which disappeared rapidly.

All investigators report an increase of leukocytes immediately following the injection.

Neisser[8] advises local treatment of syphilitic lesions, either excision or local treatment with calomel in addition to "606."

THE CURATIVE EFFECTS OF "606"

The idea that Ehrlich's new substance will prove a panacea for every case of syphilis is a mistake, notwithstanding the fact that after a single injection the spirochetes disappear from primary lesions, in from twenty-four to forty-eight hours, and that old indolent lesions heal with remarkable rapidity.

The results are best divided into two classes: (1) immediate; (2) remote.

1. *Immediate Effects.*—In all primary lesions in which the sore is of the erosive type, if taken before a positive Wassermann is present, one dose containing 0.6 gm. seems to destroy all the spirochetes. This is confirmed by Neisser.

Excision of the primary lesion, while fraught with some danger to the surgeon, accomplishes a great deal, as a large number of spirochetes are thus removed. This permits the specific to act in excess on any that may still be in the system.

In the cases in which the initial lesion is marked by extensive sclerosis a second dose has been necessary,

5. München. med. Wchnschr., Aug. 16, 1910, p. 1725.
6. Berl. klin. Wchnschr., Aug. 8, 1910, p. 1485.
7. Personal communication.
8. Berl. klin. Wchnschr., July 31, 1910, p. 1491.
9. Berl. klin. Wchnschr., Sept. 12, 1910, p. 1908.
10. Berl. klin. Wchnschr., Aug. 1, 1910, p. 1448.

because the substance in the circulation was not able to permeate the chancre on account of the extensive endarteritis present; so in this class of cases, whenever it is possible without undue loss of tissue, excision is demanded if we expect one injection to have its maximum effect.

The immediate results in secondary lues, if occurring early in the infection, are good so far as external manifestations are concerned, but in late secondaries it has been necessary to repeat the injection in some instances.

It may be possible in the future to give a preliminary treatment of potassium iodid in this class of cases, and clean house, as it were, thus bringing the spirochetes into the blood-stream. Previous treatment with mercury and potassium iodid does not, however, seem to have any effect on the efficiency of the treatment.

Tertiary lesions show the most marked improvement. This is due, as suggested by Ehrlich, to the fact that there are a large number of antibodies in the circulation and one injection stimulates the organism in a wonderful manner. It may also be explained on the hypothesis that the strain of spirochetes is well-nigh exhausted in virulence and that a little of the specific acts in a far-reaching manner.

I have intentionally omitted mentioning any of the other forms of syphilis, as the experiments were carried out in a large measure only in cases in which there were active, visible lesions.

Dr. Ehrlich[11] does not wish the specific tried at first on any except the most suitable cases, knowing full well the danger of complications in patients who are already debilitated by disease.

2. *Remote Effects.*—We have now been treating syphilis many hundreds of years with mercury, and our knowledge in regard to its efficiency or inefficiency is well established. All reports that are published on the new discovery must be regarded as preliminary, because in syphilis, more than in any other disease, freedom from relapses for years is necesary before a cure can be established.

At present our success in healing syphilis with mercury has been obtained by an extremely energetic treatment, begun early, our aim being to get a negative Wassermann and to keep it negative throughout the whole time.

If we have in "606" a specific that in one or two doses will kill all the spirochetes in the system, then we have indeed a wonderful remedy.

But how can we tell?

THE WASSERMANN REACTION

In the light of our present knowledge, our only hope lies in the Wassermann reaction. With the Wassermann reaction, under mercury treatment, it was possible with a fair degree of certainty to tell when we had the disease under control, but unfortunately after the administration of "606" we have a different picture. Here we have a large number of dead spirochetes in the system and a hyperleukocytosis, and we may have a persistent positive reaction; on the other hand, a few spirochetes may be living and later be so insignificant as to permit a negative reaction, and still later a positive one.

If we are to make use of the Wassermann test—and this seems to be the only method now at hand—we shall have to wait until numerous statistics are available before we can draw definite conclusions.

On the continent every well-regulated clinic has at least one or two Wassermann laboratories, and reports are beginning to appear. Professors Alt and Hoppe[7] were the first to report Wassermann findings. Of the original twenty-three patients, mostly paralytics, out of eighteen cases with a positive Wassermann, two became negative after one injection of 0.3 gm. "606." There was strong diminution in two others, and noticeable diminution in three.

Neisser[6] reports on primary lesions treated soon after infection that only 10 per cent. of patients with positive Wassermann became negative, but the dose was only 0.4 gm.

Schreiber[9] and Hoppe report that of fifty-two patients treated and observed for fifty days or longer, 84.6 per cent. lost a positive Wassermann. Four other patients lost the reaction later, making 92.3 per cent. The earliest change from positive to negative occurred in four days, the longest after seventy days. In one patient treated intravenously the Wassermann became negative in forty hours.

M. Meyer[12] reports sixteen cases, of which twelve were cases of paralysis. In four of the twelve the Wassermann was not affected (dose too small); in four it became less decided for a while; in four treated intravenously it became at once negative. There was no marked improvement of the paralysis.

Karl Lange[13] reports 268 patients treated.

In 153 cases in which the Wassermann was first positive, it became negative four or five weeks after treatment; nine negative cases treated with mercury before "606" was injected, remained negative; two cases of primary syphilis previously negative, treated with the substance remained negative; five cases of tertiary syphilis became positive after injection; two changed to negative, and one died with positive, two were still positive; two cases in which Wassermann had appeared negative became positive; one later became negative, the other one partially positive; ninety-seven cases remained positive.

We can see from the foregoing that the results of the Wassermann test up to the present time are very variable.

For a Wassermann test to be of value in a given patient it must become negative and remain so for at least one and one-half years; without this we are justified in not accepting any case as an absolute cure without the lapse of a long period of freedom from the disease.

CONCLUSIONS

Looking into the future, it seems hard to prophecy what we are to expect from a single injection. In order that our results may fulfil the theory of Ehrlich's "therapia sterilisans magna," the following conditions are necessary: first, one must not administer "606" in any condition that is not of spirochetal origin. Second, there must be absolute certainty of diagnosis by means of the Wassermann reaction or by examination for spirochetes. Third, the most careful and painstaking technic in preparing the substance for injection and in the injection itself must be observed.

100 State Street.

11. Personal communication.

12. München. med. Wchnschr., Aug. 16, 1910, p. 1765.
13. Berl. klin. Wchnschr., Sept. 5, 1910, p. 1656.

Therapeutics

PREVENTION OF ACCIDENTAL VENEREAL INFECTION IN SCHOOLS

In comparatively recent years the medical profession has succeeded in securing tangible results in promoting public health by means of medical inspection of the children in the public schools. The most striking of these results have been obtained chiefly in diseases which are readily recognized by moderately trained observers such as imperfections of the eyes, ears, nose, throat, skin, bones and joints. The frequency of the occurrence of venereal diseases among school children has in but few instances been noted, and the prevention of these diseases has but rarely been attempted.

The necessity for studying this subject more carefully and for the inauguration of more effort to prevent these diseases among school children is evidenced by the paper which Dr. Ira S. Wile, of New York, has recently presented (*New York Medical Journal*, Sept. 10, 1910). To show the necessity for this study he gives us the statistical facts that 20 per cent. of all venereal diseases is acquired before the twenty-first birthday; that the annual average of deaths from syphilis has increased from 4.1 per cent. in 1901 to 5.4 per cent. in 1908 in every 100,000. The recorded number of deaths ascribed to gonorrhea has remained unchanged during these years, but this does not take into consideration deaths due indirectly to the gonococcus. He quotes Dr. Morrow that it is a "conservative estimate that in this country the morbidity from gonorrhea would represent 60 per cent. of the adult male population, and that of syphilis from 10 to 15 per cent.," while it has been stated that in France 20,000 children die yearly from syphilis. It is probable that many deaths of children not ascribed to these diseases are really caused by secondary consequences of them. The primary cause of death may be concealed, if known; or may not have been diagnosed, so that deaths from various inflammations, peritonitis, and brain tumors may rightly be due to these diseases.

Probably there is no practicing physician who could not relate one instance, and perhaps a large number of instances, where he knew of some individual who came in more or less close relationship to one or more children while he was suffering from syphilis or gonorrhea. We therefore should not be surprised that many school attendants, such as janitors, scrub-women, or other adjuncts to the school, are infected with one or other of these diseases, instances of which are mentioned by Wile.

A study of school children has shown that the occurrence of syphilis and gonorrhea, generally accidentally acquired, between the ages of 4 and 16 is not infrequent. Though some schools and at least one city compel examination of the sexual organs of children before their admittance, this examination cannot be urged. Such examination is of little value unless careful microscopic examinations of secretions are made. It is, however, perfectly possible that the teacher of each room should note if a child requires too frequently to leave the room for urination, and should have the school inspector or the family physician decide the cause of such irritation or disturbance. The teacher should be urged especially to note evidences of sore mouth, sore eyes, enlarged glands, and eruptions ever so simple, and should call the school inspector's attention to such instances. The laboratory departments of the various boards of health should be as ready to examine, without charge, slides and secretions for gonococci and for the *Spirochæta pallida* as they are to make typhoid, malaria, diphtheria, and tuberculosis examinations. In other words, there can be no excuse for not having every suspected child thoroughly and properly examined, and if the findings are positive such a child should be as surely removed from school as though he had a distinctly recognized contagious disease.

The various methods of acquiring these diseases accidentally and innocently are summed up by Wile as: "by fondling, kissing, using infected glasses and infected eating utensils, from the use of common towels, pencils, sponges, and polluted toilet seats." Occasionally there was more direct contact, as "by exchanging chewing gum, interchange of mouth toys, and sexual contact."

The obvious conclusions to draw from these facts and investigations are that the toilet seats should be daily cleansed with strong antiseptic solutions. Small, individual towels should always be ready for use at the school basins. Drinking fountains must be substituted for the common drinking cup. There must be personal desk articles for each child. Short, hygienic talks should be given the children as to the danger from exchanging and putting into the mouth articles that belong to other children. They should also be taught cleanliness of their own mouths, hands, and persons. Such talks should not be given once or twice, but repeatedly, at least once every term in every room.

EXTRA-UTERINE PREGNANCY

A correct and prompt diagnosis and an immediate operation in this condition are necessities for the preservation of the life of the mother. It is not intended in this note to discuss the data obtained by physical examination, but the symptoms of suspicion of such pregnancy are so well brought out in a carefully prepared table of ten cases of this condition by Dr. H. M. Lee, of New London, Conn. (*International Journal of Surgery*, March, 1910) that it is worth while to present them again here.

These ten patients, varying in age from 26 to 43, all missed the proper date for the menstrual period from a week to more than a month. All, however, had a menstrual flow from a week late to a month late. The character of the flow in all of these patients was scanty and dark. There was sharp abdominal pain in every instance, even in the one of the nine that did not rupture. The duration of the pregnancy before the pain and rupture averaged 8 weeks. The hemorrhage was into the broad ligament twice and into the peritoneal cavity 7 times. After rupture the pulse varied from 100 to 140, while the temperature in every instance after rupture was above 99 F., but in only one instance as much as 100 F. The time of operation after rupture varied from 3 hours to 48 hours. In each of the 10 instances the patient recovered, and 6 of these women have since again been pregnant.

Uses of Glycerin.—No substance is equal in power to glycerin in disguising nauseous medicines. Castor oil, turpentine, solutions of iron and various other medicines can be diluted and at the same time almost completely disguised by glycerin. As Wood says: "It seems to envelop the medicinal substance and prevent its action on the palate."—G. D. Lind, in *West Virginia Medical Journal*.

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[*For other information see second page following reading matter*]

SATURDAY, OCTOBER 22, 1910

A SANER VIEW OF CHOLERA

The constant reader of the daily newspaper, if he reflects on the difference between our national attitude respecting the cholera menace in 1892 and that almost universally exhibited at the present day in regard to a similar situation, will be tempted to conclude that the American nation has progressed toward a greater self-control. The attempted "quarantine" at Fire Island eighteen years ago cannot have been forgotten by many of our readers. Recollections of the barbarities there practiced in the name of sanitary protection may even yet cause a feeling of shame in the citizen jealous of his country's reputation for sanity and soberness of judgment. To be sure, the panic of 1892 was quickly over, so that the New York papers could soon speak reprovingly of "the savagery that has lately disgraced our shores," but while it lasted it was acute and to all appearances amazingly general. As a matter of fact, cholera did get into New York in spite of the brutal quarantine measures that were employed. Perhaps more would have got in with a less barbaric quarantine, but it could probably have been suppressed quite as readily as the smaller quantity.

How different it all is at present! Cholera is now being brought to our shores, but there is little or no newspaper hysteria, little or no general alarm. National and local authorities are active in the employment of proper measures of diagnosis and exclusion, but no tendency has been displayed to revert to barbarism. The cholera danger, such as it is, is viewed soberly and calmly without hysterics and without belittlement of the real peril.

The actual situation has been fully set forth in our news-columns of the last few weeks. Cholera has been more prevalent in parts of Europe the past season than for many years. The disease, furthermore, is widely distributed and many ports having important commercial relations with this country have been infected. It does not seem improbable that in 1911 a still further extension of the disease will occur. More cases may reach our Atlantic ports and it is by no means unlikely that some healthy "carriers" may escape detection and introduce the disease into the United States. But even so, does anyone believe that a "pandemic" of cholera is probable in this country under present conditions? If we consider simply the matter of public water-supply, the situation throughout the nation is highly reassuring. The majority of our large cities now have supplies into which little or no sewage enters or which are effectively purified by sand-filtration. In the absence or relative scarcity of sewage-polluted water-supplies, there is no likelihood of any general spread of cholera. Even in Russia at the present time the city of Moscow, which is the fortunate possessor of a good water-supply, is practically exempt from cholera, while St. Petersburg, with its badly contaminated river-water, has suffered severely. As an illustration of the changed conditions in this country compared with eighteen years ago we may cite the following sentence from a paper written by an eminent sanitarian in 1892, who calls attention to the fact that cities with a good drinking-water have nothing to fear from cholera, and continues: "The citizens of Philadelphia, Chicago, Lowell, Lawrence and Albany, on the other hand, may reasonably feel much concern about cholera." To-day the five cities which were then thus singled out for sanitary opprobrium—and justly so—all have good supplies of drinking-water obtained either by sand filtration, by substitution of ground-water for contaminated river-water, or by exclusion of sewage from the source of supply. The improvement brought about in these instances is, we believe, fairly typical of the improvement that has occurred in the country at large.

It is not possible nor is it especially important to determine to what degree the relatively slight alarm over cholera shown at the present time is due to just confidence in the increased wholesomeness of our public water-supplies. Other factors, such as the increased efficiency of the national and local public health service and our more complete knowledge of the ways and means by which cholera is spread, certainly are taken into consideration or at all events should be. The fact remains that we can now soberly face the possibility that a person harboring cholera vibrios may land in a seaboard city. We have no reason to show either unconcern or hysterical fear at the event.

THE OXYDONOR AND SIMILAR FAKES

It is sometimes hard to decide which is the greater—the impudence of the quack or the credulity of his victims. The comparative ease with which the medical faker is able, by the most preposterous of claims, to separate the fool from his money indicates the enormous potentialities in advertising. It might be supposed that an individual who set out to sell, as a panacea for most fleshly ills, a piece of brass pipe with one or two wires attached to it, would have a hard and rocky road before him. But such a supposition would be incorrect. Not only would the enterprising faker find customers for his

gas-pipe, but there would be such a demand for this most inane of "therapeutic" devices, that two or three imitators would immediately enter the market.

The original exploiter of what may be called "gas-pipe therapy," was one Hercules Sanche, who modestly described himself as the "Discoverer of the Laws of Spontaneous Cure of Disease." Of course, Sanche did not "discover" this long-known truth at all, but he did appreciate its commercial value. Starting with the premise that a certain proportion of sick people—and of those who think they are sick—will get well without treatment, or in spite of it, he cast about to devise a means of reaping a pecuniary reward from the operation of this natural law. Sanche might, of course, have used some harmless or unmedicated tablets and after describing at great length the marvelous properties inherent in them, have sold them with substantial profit to himself. This method of fleecing the public, however, besides being old and threadbare, was not altogether free from the probability of legal complications. He might have offered to sell "absent treatment" and have discoursed learnedly on the benefits and virtues of this wonderful therapeutic force. But "absent treatment" does not appeal to the average man who wants a tangible something in exchange for his dollars. Sanche finally hit on a device that was perfectly harmless—and worthless—and yet theatrical enough to make the purchaser feel that he was getting something for his money. He called it the "Electropoise," and it consisted, as described elsewhere[1] in this issue, of a piece of metal pipe closed at each end and with a flexible wire attached. That was all. It sold for ten dollars.

So popular did this humbug become that Mr. Sanche extended his operations by putting on the market a modification of the "Electropoise"—the "Oxydonor." This differed from the "Electropoise": It was shorter; it contained a stick of carbon instead of being empty; and it sold for thirty-five dollars instead of ten dollars. Coincident with his invention of the "Oxydonor," Sanche also invented a "force" or "power" which he christened "Diaduction." The "Oxydonor" was the instrument by which this "force" was supposed to be created. To operate the "Oxydonor," the distal end of the wire attached to it was applied to the wrist or ankle of the fool—we may be excused for using this term—who used it; the "Oxydonor" itself was placed in cold water and the "diaductive force" was expected to be thus generated.

The commercial success attending the exploitation of this fake was such that an imitation appeared under the name "Oxygenor" or the "Oxygenor King." This fraud, also, is described in detail elsewhere[1] in this issue. It differs but little from the "Oxydonor"—so little, in fact, that Sanche brought suit against the "Oxygenor" concern for infringement of patent. The court held, however, that such a palpable humbug as the "Oxydonor" was not entitled to legal protection.

1. Pharmacology department, page 1486.

More recently still, another fake of the same nature has been foisted on the public. It is called the "Oxygenator" and selling depots have been established in many cities. An elaborate booklet describes the virtues of this latest exponent of "gas-pipe therapy" and another new "force" has been invented to aid in selling it, *viz.*, "Oxypathy." In many ways the latest type of this form of charlatanry is the worst, inasmuch as claims are made for it that are not only absurd but dangerous. For instance, the following statements occur:

DIPHTHERIA: This overwhelming child's disease finds its supreme master in the *Oxygenator*. No earthly power except the *Oxygenator* can take the slowly choking child, and with speed, simplicity and safety, bring it back to health.

Don't jeopardize the health and life of your children by allowing to be injected into their veins and blood the often fearfully contaminated and death-dealing serum of an animal, otherwise known as antitoxin.

It is difficult to restrain one's indignation at the thought that such viciously cruel lies as these are permitted to be scattered broadcast. Let the neurotic and neurasthenic adult, if he can convince himself that a nickel-plated piece of gas-pipe possesses curative properties, experiment with it on his own person if he wishes. But that a helpless child in the throes of a fearfully dangerous—and yet, rightly treated, curable—disease, should be allowed to suffer and die because ignorant parents have been persuaded to rely on these mechanical frauds, is no less than criminal. As for the miserable harpies who for a few filthy dollars will write such cold-blooded untruths as those quoted above, the safety of society demands that they be put with thieves and murderers, where they can do no further harm.

To sum up: The "Electropoise," the "Oxydonor," the "Oxygenor" and the "Oxygenator" are utterly worthless except as a means of enriching their exploiters. Their therapeutic value, aside from the element of suggestion that may be induced in those simpletons who are willing to pay from ten to thirty dollars for a piece of nickel-plated tubing, is absolutely *nil*. As already said, if adults wish to squander their money on such foolishness and are content to confine the "treatment" to their own persons, well and good. If they have nothing much the matter with them they may believe they have received benefit; if they are dangerously ill, Nature will probably exterminate them as unfit. But let no person try to "cure" the helpless child with such frauds; as soon as that is attempted, such an individual ceases to be a harmless idiot and becomes a dangerous one.

POLIOMYELITIS

The disease long known as infantile spinal paralysis, or acute anterior poliomyelitis, has acquired of late a new and vital interest for many physicians. This interest has been aroused by the numerous and wide-spread epidemics, especially in this country, and by the gratifying contributions to our knowledge of the disease, nota-

bly those of Flexner and Lewis from the Rockefeller Institute. Within three or four years, upward of five thousand cases have been reported in the United States, and it is quite certain that many more have escaped detection and record. Extensive epidemics have occurred in Massachusetts, New York, Vermont, Pennsylvania, Virginia, Michigan, Wisconsin, Minnesota, Iowa, Nebraska and Kansas. No community or family, at least in the northern states, is exempt from the possibility of its invasion, and, while the approach of cold weather will diminish its incidence this year, the advent of next summer may bring this dread invader to the door of any physician.

It is of the utmost importance, therefore, that every practitioner should acquaint himself with the recent advances in our knowledge of this disease, should be alert to detect its first appearance in his practice, and should prepare himself to cope with it effectively.

The causative agent has been shown by Flexner and Lewis to be an ultramicroscopic organism of great potency, resistant to freezing, drying and glycerinization, infectious and quite certainly contagious. It is resident in the body of the afflicted person—in the cerebrospinal axis, the cerebrospinal fluid (at least in certain stages), the mesenteric and other lymph-glands, the nasal mucous membrane, the saliva and possibly elsewhere. It is discharged from the body chiefly by way of the nasal mucous membrane and probably finds its principal avenue of entrance by the same route, though it has been successfully inoculated in several other ways. Whether or not the virus is ever conveyed by insects is undetermined, but the possibility of such conveyance warrants the most thorough precautions to prevent it.

The numerous opportunities afforded of late for autopsies on patients dying in the early stages have made it possible to study much more exhaustively than heretofore the pathogenesis of the disease, and to set at rest former controversies in reference thereto. There is a striking unanimity in the reports of these recent pathologic observations and deductions from all quarters. The alterations found are those of a specific general infection, expending its destructive energy chiefly on the gray matter of the cord and brain. The vascular changes are primary, but changes are found also in the posterior root-ganglia, the nerve fibers, heart, liver, kidney, lymph-glands and elsewhere. The pathology of the disease has been concisely summarized by Robertson and Chesley.[1]

The disease is characterized by a sudden onset, marked prostation, headache, pain and rigidity in the back of the neck and along the spine, tenderness and pain on motion of the extremities, giving rise to a modified Kernig sign, fever—usually moderate in degree—rapid pulse, sometimes vomiting, and usually obstinate constipation, rarely diarrhea. Involvement of the encephalon is characterized by delirium, convulsions and stupor. The characteristic paralyses, in both the spinal and encephalic types, constitute the most convincing diagnostic sign, but these are sometimes delayed for several days, and are often absent in the abortive cases, which are as capable of transmitting the infection as are those of severer type.

The diagnosis should not be difficult, even in the early stages. On the prompt recognition of the disease at this period depends the physician's ability to check the advance of the epidemic and to safeguard his community. The diseases with which poliomyelitis is most likely to be confounded are influenza, typhoid and paratyphoid, rheumatism, auto-intoxication with meningism, possibly some one of the exanthemata (a rash is not an infrequent accompaniment of poliomyelitis) and finally epidemic meningitis. None of these should present serious difficulty to the careful observer, except meningitis; and here the lumbar puncture of Quincke affords a reasonably certain means of differentiation. Flexner has described the characteristic appearance of the cerebrospinal fluid in poliomyelitis at various intervals after its inception, and the persistent absence of the *Diplococcus intracellularis* in three or four specimens almost negatives the possibility of epidemic meningitis. The meningitides due to other organisms are usually secondary to their invasion of other organs. Every practitioner should have always at hand the appliances requisite for this simple procedure, which involves little more difficulty, pain or danger than a hypodermatic injection.

The first duty of the physician, after a diagnosis of possible poliomyelitis has been made, is to endeavor to protect the family and the community by the prompt isolation of the patient and the scrupulous disinfection of all articles which may have become contaminated with the discharges, especially those from the nose and mouth. If such complete isolation cannot be secured in a suitable room in the house, or by the removal of the patient to an isolation hospital, the erection of a tent with a board floor, to accommodate the patient with nurse or mother, offers an admirable solution of the difficulty. In the city a suitable site can be found in a vacant lot or on the porch or roof of house or apartment. The experience of many physicians in the treatment of tuberculous patients, and of Northrup and others with the open-air treatment of infants and children, has demonstrated that such an environment is not only safe but advantageous even in severely cold weather. Fortunately the season of prevalence of poliomyelitis is the summer when the prejudice of the laity is not likely to obtain against the consignment of a child to a properly constructed tent. If every case of suspected poliomyelitis or of any other infectious disease, were to be promptly isolated by some such arrangement many virulent epidemics might be nipped in the bud, drastic

1. Robertson, H. E., and Chesley, A. J.: Pathology and Bacteriology of Acute Anterior Poliomyelitis, THE JOURNAL A. M. A., Sept. 17, 1910, p. 1013

quarantine measures avoided, and an enormous saving of illness, death and wretchedness effected. Early diagnosis, prompt isolation and thorough disinfection afford at present the only effective measures for the suppression of infectious poliomyelitis, as of most other infectious diseases.

The curative treatment of the individual patient is fully discussed in the articles by McClanahan, Sachs and Ridlon, prepared at the request of THE JOURNAL, which appear elsewhere in this issue.

Current Comment

TEACH THE TEACHERS

The September number of the *Bulletin of the North Carolina Board of Health* is a teachers' edition, specially prepared for the instruction of the public school teachers of the state. It contains articles on the importance of the recognition of physically defective children, the movement for oral hygiene in the public schools and its importance, the medical inspection of public school children, the value of science teaching in the grades and high schools, and the relation of childhood and youth to public health. Illustrations show the dangers of the common drinking-cup. Such bulletins issued under the authority of the state board of health and distributed to school teachers, parents, and pupils of the high schools are a most valuable means of public instruction on sanitary and hygienic questions.

CONTAMINATED WATER-SUPPLIES AND SENSITIVE OFFICIALS

In one of the most important reports of recent years on typhoid fever in a large city, Dr. C. Hampson Jones, assistant commissioner of health of Baltimore, comments very justly on a common official, not to say commercial, attitude toward any criticism of a public water-supply. "Last of all, we will consider as a possible source of some of the typhoid fever infection our drinking-water. Of all the ten alleged possible sources of typhoid fever in our city, this one must be mentioned with caution. The other nine possible sources may be heralded throughout the land, and no dissenting voice will be heard; no one will feel himself personally aggrieved. But it is not so when the tenth source, water, is even hinted at as a possible source of some of the cases of the fever." It is possible to say hard words about lack of sewer connection, abundance of opportunity for fly-breeding and uncleanliness in general, but the water-supply must be approached with reverent touch and not lightly condemned or even suspected. The reason for this feeling is plain. A water-supply exposed to contamination is now generally recognized as a commercial disadvantage, as an item against the interests of the city. "Conventions" are apt to give a wide berth to a city with bad drinking-water and in some cases are transferred to a rival community, as has recently happened at Rutland, Vt. The mildest censure or most friendly warning may be made to seem bitterly offensive. At the recent meeting of the Central States Water Works Association at Indianapolis, Mr. Paul Hansen made a strong plea for a change in this particular. The attitude of some officials is stated very frankly: "We find otherwise competent and reliable water-works superintendents zealously defending water-supplies known to be polluted or subjected to the possibility of pollution. The argument used in nine cases out of ten is that the water cannot be harmful since no cases of typhoid fever or other diseases have been definitely traced to its use. This argument is sometimes used in the face of the presence of an abnormally high death-rate from typhoid fever." It is, however, an encouraging sign to find sensitiveness displayed at all. It is well to have a pure water-supply considered as a municipal asset.

ILLEGIBLE PRESCRIPTIONS

Many of us indulge in hasty penmanship, especially in such important matters as the writing of prescriptions, thereby giving the profession a reputation for carelessness in this respect which, on the whole, is undeserved. The excuse frequently given is that the physician is too busy to spend time over such a trivial matter as chirography. It is just possible that when one considers one's time too valuable to permit the doing of good work, the valuation placed on that time is too high. The writing of a prescription or a certificate is as essential a part of a physician's work as the making of a diagnosis or an examination; and neglect to write a prescription legibly may entail as serious consequences as neglect of other branches of professional duty. If there is any vocation in which there are no trifles—in which there is no excuse for negligence at any point—it is the practice of medicine.

MEDICAL RESEARCH AND CANCER

Through medical research many problems relating to the etiology, diagnosis and treatment of disease have already been solved, and so much has been added to the positively known facts of medicine as to place that branch of learning among the sciences. Each discovery usually leads directly to the solution of numerous other related problems. For example, the discovery of bacteria not only revealed the specific causes of several diseases but led to positive methods of identifying different forms of bacteria and to effective methods of treatment by antitoxins, serums and otherwise. Each discovery has given added impetus to research along other lines, and has encouraged the belief that many other diseases, such as cancer and tuberculosis, will sooner or later be shorn of some of their terrors. Most of all, however, these successes have attracted the attention of men of wealth to the value of medical investigation, so they are now giving liberally toward the furtherance of this research. Not only do we hear frequently of gifts for our research medical schools, but funds especially for research are also being provided. In Great Britain the Imperial Research Fund has recently held its annual meeting, at which Mr. Arthur J. Balfour was a speaker. In this address, as reported by the London *Times*, Mr. Balfour shows how all great therapeutic problems must

be dealt with as a part of the great biologic whole. He shows also that most if not all of the discoveries have resulted from a broad scientific outlook which has produced unexpected conclusions and results in very different fields apart even from human pathology. For example, he shows how the investigation of microbic organisms led to finding in bacteria a common cause in the production of such utterly different things as alcohol, pearls and whooping-cough. At any rate, modern medical research requires not only the use of every variety of specialized apparatus, such as the microscope and the spectroscope, but also of the known facts and precise methods of physics, chemistry, physiology and biology, as well as of the more recent sciences of bacteriology, pathology and pharmacology. It will be interesting to know, if that time ever comes, through which of these sciences or what combination of these sciences the secret of the cause or treatment of cancer shall have been discovered.

Medical News

COLORADO

Sanatorium for Hollanders.—The Christian Benevolent Society for Consumptives has been incorporated to establish a sanatorium for the care of those suffering from tuberculosis. The institution will be located in South Denver and will receive Hollanders from all parts of the United States. The secretary of the institution is Rev. I. Van Dollen, Denver.

Women Elect Officers.—The Women's Colorado State Medical Society, at its third annual meeting held in Colorado City, October 11, elected the following officers: president Dr. Mary Hawes, Denver; vice-presidents, Drs. N. Eugenia Barney, Sterling, and Emogene P. Sherman, Idaho Springs; secretary-treasurer, Dr. Kate E. Geiger Yont, Denver, and auditor, Dr. Alice B. Guthrie, Denver.

Personal.—Dr. Horace G. Wetherill, Denver, was elected honorary president of the fifth International Congress on Gynecology at St. Petersburg.——Dr. Luke MacLean, Pueblo, has been appointed a member of the State Board of Medical Examiners, vice Dr. Carey K. Fleming, Denver, deceased.——Dr. Frank N. Carrier, Canon City, has been appointed surgeon in chief of the Chino Copper Company, Santa Rita, N. M.——Dr. Francis A. Sutorius, Florence, fell, October 3, and dislocated his right shoulder.

ILLINOIS

Personal.—Dr. Harry C. Hill, Streator, has returned from abroad.——Dr. William Lorenz, formerly a member of the staff of the Kankakee State Hospital, has been made assistant medical superintendent of the Wisconsin State Hospital, Mendota.——Dr. Walter G. Bain has been elected director of the pathologic laboratory of St. John's Hospital, Springfield.——Dr. Sidney G. Pratt, Buda, has returned after a year's absence greatly improved in health.——Dr. Joseph De Silva, Rock Island, has been elected secretary of the National Association of Penal and Reformatory Institutions.——The damage suit instituted by Dr. Jessie Bulkley Ogden, Waukegan, against the *Waukegan Gazette* for damages arising from a criminal action inaugurated by the state against Dr. Ogden, following the death of a patient, is said to have been taken from the docket by her attorney, October 5.

Chicago

Personal.—Dr. Robert Dodds was thrown from his automobile in a collision with a trolley car October 10, and sustained painful injuries.——Dr. and Mrs. Joseph Zeisler and daughter, Dr. and Mrs. Cassius C. Rogers, and Dr. Norval H. Pierce have returned from Europe.——Prof. Carl S. N. Hallberg, for several years secretary of the Section on Pharmacology and Therapeutics of the American Medical Association, and a member of the Council on Pharmacy and Chemistry, is critically ill at his home in Chicago.

Cornerstone Laid.—The cornerstone of the Iroquois Memorial Emergency Hospital at 87 Market Street was laid October 15, in the presence of more than one hundred relatives of the victims of the Iroquois Theater calamity. Dr. William A. Evans, health commissioner, received the hospital on behalf of the city.

Scandinavian Physicians Meet.—The annual dinner and election of officers of the Scandinavian Medical Society of Chicago was held October 13. Dr. Alfred C. Cotton, president of the Illinois State Medical Society, was guest of honor. Dr. Andreas Klövstad was elected president, and Dr. William J. Anderson, secretary-treasurer.

Health League Formed.—The Chicago Health League was organized October 12, at the rooms of the Visiting Nurses' Association, with Dr. Sydney Kuh, president, and Miss Harriet Fulmer, secretary. The organization is composed of representatives from eighty different clubs, civic associations, and labor unions, and its object is the promotion of the general health of the city. Legislation for better sanitation and health regulation of factories and all places of employment will be demanded by the league.

INDIANA

New Medical Chapter.—A chapter of the Phi Chi Medical Fraternity has been established at the University of Indiana, Bloomington, under the name Alpha Mu.

Personal.—Dr. Chauncey W. Dowden, medical director of the West Baden Hotel, has returned from Europe.——Dr. Samuel M. Ried, Muncie, is recovering after being seriously ill at his home for several months.

Antituberculosis Camp Open During Winter.—The directors of the Antituberculosis Colony, Pottowatomie Park, South Bend, have decided to make the cottages habitable for cold weather, and to keep the camp open during the winter months.

Medicine Vendor Fined.—William Hope, Indianapolis, a vendor of nostrums and mineral water, has been fined for selling medicines without a license. The sentence was suspended on the promise of the defendant to leave the city at once.

Verdict for Physician.—A jury in the circuit court at Bluffton, on September 21, is said to have returned a verdict in favor of the defendant in the suit of Mrs. Cora Vore against Dr. James W. McKinney, in which damages of $5,000 were sought for alleged malpractice.

IDAHO

Home from Europe.—Dr. James L. Stewart, Boise, has returned after a three-months' trip abroad.

State Association Session.—The eighteenth annual meeting of the Idaho State Medical Association was held in Boise, October 6 and 7, under the presidency of Dr. John M. Taylor, Boise. The following officers were elected: president, Dr. John W. Givens, Orofino; vice-president, Dr. George O. A. Kellogg, Nampa; delegate to the American Medical Association, Dr. Ayer A. Higgs, Soldiers; alternate, Dr. C. L. Dutton, Meridian; Dr. George H. Coulthard, Idaho Falls, chief of the committee on public health, and Dr. William T. Drysdale, New Plymouth, Idaho member of the board of trustees of *Northwest Medicine*.

IOWA

Tuberculosis Census.—The State Board of Control on October 11, began taking a census of tuberculosis sufferers of the state. More than 3,500 letters were sent out to physicians of the state asking each to make a report to the board of cases in his community, the age of patients, stage of the disease, and whether or not health rules were being observed.

Personal.—Dr. Benjamin R. McAllister, assistant physician at the Cherokee State Hospital, has been appointed superintendent of the State Insane Hospital, Jamestown, N. D.——Dr. George Donahue, the new superintendent of the State Inebriate Hospital, Knoxville, assumed charge of the institution October 7.——Dr. Max E. Witte, superintendent of the Clarinda Insane Hospital, has been reappointed for a fourth term of four years by the board of control.——Dr. Willis E. Keith, Lost Nation, sailed for Europe October 1.——Dr. Thomas C. Gorman, Anamosa, began work as medical superintendent of the state reformatory October 2.——Dr. Harry E. Kirschner, superintendent of the Tuberculosis Sanatorium, Iowa City, has returned after three months abroad.

KENTUCKY

Personal.—The degree of master of arts has been conferred on Dr. Archibald H. Barkley, Lexington, by Transylvania University.——Dr. Bernard Asman, Louisville, has removed to Hot Springs, Ark.

Sanatorium Opened.—Waverly Hill Sanatorium for Persons Suffering from Tuberculosis was formally opened to the public October 6. The institution has been established at a cost of about $150,000 and is maintained jointly by the city of Louisville and county of Jefferson.

License to Practice Refused.—The governor, on September 30, refused to take action on the appeal of James S. Calvert of Caldwell county, who was refused a license by the State Board of Health, and who appealed from its decision. The governor, after reviewing the record, stated that he was not convinced that he should disapprove of the action of the board, as the record did not show that the appellant had been properly educated.

Poison Law Upheld.—The court of appeal has rendered a decision upholding the law regulating the sale of poisons. A druggist was indicted on information from the State Board of Pharmacy for selling morphin without a prescription from a physician, and without satisfying himself that the poison was to be used for legitimate purposes. The defendant's attorney contended that the words "retail" and "legitimate purposes" as used in section 2630 of the Kentucky Statutes were too indefinite and uncertain and that therefore the statute is invalid. The court holds that the statute is sufficiently specific and confirms the imposition of the fine.

LOUISIANA

New Maternity.—The New Orleans Lying-in-Clinic has been founded by Drs. Jacob W. Newman and Edith Loeber-Ballard. A building at Howard Avenue and Lee Circle has been leased for headquarters, and the clinic is open for consultation and general advice every day between ten and eleven, and at all hours for emergency calls.

The Cocain Evil.—The Orleans Parish grand jury has taken a strong stand regarding the cocain traffic in New Orleans. Fortified with facts from retail and wholesale druggists and physicians, the grand jury not only has recommended the continued rigid enforcement of the provisions against the illegal sale of cocain, but that the judges of inferior criminal courts sentence such law violators, when convicted, to a jail term instead of imposing a fine, and that a drastic state law be drafted increasing the penalties and limiting the quantities of cocain sold by wholesale dealers, and prohibiting and penalizing the importation by retailers and wholesalers of cocain into the state in larger quantities than are required for legitimate medicinal purposes. Fifteen cocain vendors have been arrested, and several have already been fined the maximum penalty allowed under the present law.

Personal.—Dr. George Dock has removed from New Orleans to 1906 Locust Street, St. Louis.——Dr. John B. Elliott, Jr., has been made chief of the department of medicine of Tulane University, vice Dr. George Dock, resigned, and Dr. J. Birney Guthrie has been made professor of clinical medicine.——Dr. Joseph A. Danna, New Orleans, has returned from Europe.——Dr. George S. Kreeger has been elected president of the Lake Charles Board of Health, vice Dr. Temple B. Smith, deceased.——Dr. Louis A. Murdock, St. Joseph, has been elected president of the Tensas Parish Board of Health.——Dr. R. Clyde Lynch, New Orleans, has been elected acting surgeon in charge of the ear, nose and throat department of the Eye, Ear, Nose and Throat Hospital. He has also been made professor of oto-rhino-laryngology in the postgraduate department of Tulane University, vice Dr. Gordon King, deceased.——Dr. James A. Anderson has been elected a member of the board of health of New Orleans, vice Dr. William H. Robin, resigned.

MARYLAND

Fixes Minimum Fee.—Anne Arundel County Medical Society, at its meeting October 11, adopted resolutions fixing the minimum fee for examination of insane persons at $10. The county has persistently refused to pay more than $5 for this class of examination.

Baltimore

Department Asks Increased Appropriation.—The health department has asked for an increased appropriation of $45,555 for the coming year.

Cottage at Sanatorium Dedicated.—The Mayer Cottage, a three-story building with accommodation for 20 patients, was dedicated at the Jewish Home for Consumptives in the suburbs of the city, October 16.

Grawitz in Baltimore.—Dr. Ernst Grawitz of the University of Berlin lectured at Johns Hopkins Hospital October 11 on "Diseases of the Blood." During his stay in Baltimore, Dr. Grawitz was the guest of Dr. Lewellys F. Barker.

Asks Appropriation for Hospital.—Dr. Warren P. Morrill, resident physician, Dr. Joseph W. Schereschewsky, U. S. P. H. and M.-H. Service, and others appeared before the Board of Estimates October 11 and urged an appropriation for an additional building and also for an administration building for Sydenham Hospital for Infectious Diseases, to cost $55,000.

Personal.—Dr. John W. Chambers, who has been suffering from septicemia due to an infected wound of the hand, is reported much improved.——Dr. Barrett C. Catlin, who was operated on in September, is reported to be convalescent.——Dr. Martin F. Sloan, resident physician at Eudowood Hospital for Tuberculosis, has gone to Johns Hopkins Hospital with suspected typhoid fever.

Lectures to Medical Students.—Prof. Alexander C. Abbott, of the University of Pennsylvania, will deliver two lectures at the University of Maryland, November 9 and 10, on "The Functions of the Municipality in Public Preventive Medicine" and "The Interdependence between the Laboratory and the Clinical Investigator."——Dr. Charles Wardell Stiles, U. S. P. H. and M.-H. Service, began a course of lectures at Johns Hopkins University October 12 on "Medical Zoology and Animal Parasites."

MICHIGAN

Sanitary Work of Railroad Company.—Dr. Arthur M. Hume, Owosso, chief surgeon of the Ann Arbor Railroad, announces that all passenger cars are fumigated each month; that individual drinking cups have been installed; that water tanks are being reconstructed so that ice does not come in contact with the water; that anti-spitting cards are being placed in coaches and stations, and that all smoking cars are being provided with cuspidors which are cleaned with an antiseptic solution at the end of each trip.

Accused Go Free.—In the case of A. W. Stewart, Mount Clemens, charged with illegal practice of medicine, which came up in circuit court, September 19, proceedings were dropped and an order secured for discontinuance of the suit on the declaration of the defendant that he had ceased practice and would qualify under the state law before resuming.——In the case of Mrs. Annie Daniels, living near Twining, charged with criminal abortion, causing death, on Miss Mary Lyle, the jury, on September 14, brought in a verdict of not guilty.

Hospital Staff Organized.—The House of Providence Hospital, Detroit, organized the following physicians into its staff October 10: radiographer, Dr. George C. Chene; obstetrics, Drs. Nathan Jenks, Charles H. Judd, Walter E. Welz, F. J. A. McDonnell, William H. Morley and W. E. Tyson; diseases of children, Drs. Guy L. Kiefer, Francis Duffield and Thomas B. Cooley; medicine, Drs. Edwin G. Knill, Hugo A. Freund, George A. Trizisky and Victor C. Vaughan, Jr.; eye and ear, Drs. Eugene Smith and Robert W. Gillman; nose and throat, Drs. Burt R. Shurly and Richard E. Mercer; skin, Drs. Henry R. Varney and R. A. C. Wollenberg; nervous diseases, Drs. Augustus W. Ives, Raymond L. Clark and David R. Clark; pathologist, Dr. George C. Chene; visiting staff, Drs. David H. O'Donnell, John V. White, Frank T. F. Stephenson, Eugene Robb, Isaac L. Polozker, Christopher Campbell and Edwin B. Forbes; consulting physicians, Drs. Edmund A. Chapoton, J. Henry Carstens, Theodore A. McGraw, Max Ballin, Charles Douglas and David Inglis; general surgery, Drs. Frank B. Walker and William A. Spitzley; associates, Drs. Allen W. McDonald, Robert T. Tapert, William J. Seymour, Claude M. Stafford and William E. Keane; gynecology, Drs. Howard W. Longyear and H. Wellington Yates; associates, Drs. Theodore A. McGraw, Jr., and Benjamin R. Schenck; proctology, Drs. James A. McVeigh and D. T. Kirschner; orthopedics, Drs. Daniel LaFerte and William E. Blodgett, and gastroenterology, Drs. James E. Davis and William M. Harvey.

MINNESOTA

Academy Election.—The Minnesota Academy of Medicine, at its annual meeting in Minneapolis, October 5, elected Dr. S. Marx White, Minneapolis, president; Dr. John L. Rothrock, St. Paul, vice-president, and Dr. Arthur W. Dunning, St. Paul, secretary-treasurer.

Sanitarians in Conference.—At the meeting of the Minnesota State Sanitary Conference in Minneapolis, October 6 and

7, Dr. Harry A. Tomlinson, superintendent of the State Hospital for the Insane, St. Peter, was elected president and J. T. Gerould, of the University of Minnesota, vice-president.

Auxiliary Organized.—A permanent organization of the Woman's Auxiliary of the Hennepin County Medical Society was effected at Minneapolis, October 10. Mrs. W. J. Burns was elected president; Mrs. J. W. Little, vice-president; Mrs. Frank J. Corbett, secretary, and Mrs. C. Nootnagle, treasurer.

Personal.—Dr. Thomas C. Clark, Stillwater, has gone to the district recently devastated by forest fires and is in charge of the hospital arrangements, and of the details for the care and relief of the sufferers.——Dr. George F. Beachler, Minneapolis, is reported to have been missing from his office and home since September 5.——Dr. Gustavus A. Newman, New London, has been appointed physician at the State Penitentiary, Stillwater, vice Dr. Burton J. Merrill, resigned.

New Dispensary Staff.—Dr. Henry C. Knight, Minneapolis, has been elected chief of the staff of the Wells Memorial Dispensary, and Dr. James S. Reynolds, secretary. The following department heads have been appointed: diseases of the stomach and intestines, Dr. Henry L. Knight; eye, ear, nose and throat, Drs. Howard McMorton and James S. Reynolds; surgery, Drs. William M. Chowning and James E. O'Donnell; internal medicine, Drs. Henry W. Cook and Kemlin J. Lee, and obstetrics and diseases of children, Dr. Charles B. Wright.

Combating Tuberculosis.—At the annual meeting of the Goodhue County Medical Society, held in Red Wing, October 4, the establishment of a county sanatorium for consumptives was earnestly favored. The building fund at present is only $2,000 but the society decided to raise $2,500 by subscription for the establishment of a suitable hospital.——The new plans for the new St. Louis County Tuberculosis Sanatorium are being prepared by architects of Saranac Lake, N. Y. The sanatorium will be located on an eighty-acre site at Midway and will include an administration building and several cottages.

State Society Meeting.—At the forty-second annual meeting of the Minnesota State Medical Association, held in Minneapolis, Oct. 6 and 7, the following officers were elected: president, Dr. James W. Robertson, Litchfield; vice-presidents, Drs. Frank W. Dimmitt, Red Wing, and Charles L. Schofield, Benson; secretary, Dr. Thomas McDavitt, St. Paul (reelected); treasurer, Dr. Richard J. Hill, Minneapolis; councilors, Dr. Charles E. Dampier, Crookston, First District; Dr. Joseph G. Millspaugh, Little Falls, Second District, and Dr. John L. Rothrock, St. Paul, Fifth District; delegate to the American Medical Association, Dr. George Douglas Head, Minneapolis, and alternate, Dr. Max P. Vander Horck, Minneapolis. The next meeting will be held in St. Paul on the first Thursday and Friday of October, 1911. The association adopted resolutions endorsing the Owen Bill for a national department of health, commending the work of Dr. Harvey W. Wiley, and condemning the use of benzoate of soda and like substances as food preservatives. The association decided to continue the *Journal of the Minnesota State Medical Association* as its official organ, with the understanding that the subtitle *Northwestern Lancet* should be removed from the cover.

MISSOURI

Silver Day for Hospital.—On Silver Day at Kansas City, more than $6,300 was collected for Mercy Hospital.

Colored Physicians Organize.—The negro practitioners of Missouri met in Sedalia October 8, and organized the Pan-Medical Association of Missouri, and elected the following officers: president, Dr. J. Mayo Harris, Sedalia; secretary, Dr. James F. Shannon, Kansas City, and treasurer, Dr. John R. A. Crossland, St. Joseph.

Personal.—Dr. D. B. McHenry, Princeton, has recently returned from Europe and has located in Oklahoma City.——Dr. D. Everett Standard, Springfield, fractured his arm in attempting to crank an automobile September 25.——Dr. T. J. McAllister has been elected treasurer of the St. Joseph Colored Antituberculosis Society.

St. Louis

Old Buildings Used for Consumptives.—The city quarantine hospital has been converted into a sanatorium for the treatment of tuberculosis and 74 patients are at present under treatment.

Violators of Milk Law Fined.—Fifty milkmen, charged with selling milk under the standard required by the city, or containing formaldehyd as a preservative, were arraigned in police court October 5, and 49 were either fined or ordered to pay costs.

NEW YORK

Clinical Lectures.—Dr. L. Duncan Bulkley will give the twelfth series of clinical lectures on diseases of the skin at the out-patient hall of the New York Skin and Cancer Hospital, Wednesday afternoons at 4:15, from November 2 to December 21. The medical profession is invited.

Typhoid Fever.—The epidemic of typhoid fever in Westchester County has not assumed the proportions recently reported, there being at present only about 25 cases under treatment. The epidemic has been traced to a small brook running through White Plains, and is not due to the public water supply. In view of the prevalence of typhoid throughout the state, Governor White has asked Dr. Eugene H. Porter, State Commissioner of Health, to investigate and report on the actual facts. It is intended to follow up this investigation with steps to prevent the further spread of the disease at threatened points.

PENNSYLVANIA

Personal.—Drs. Henry W. Sweigart, Lewistown, and William A. Tower, Mifflintown, were seriously injured, October 9, in an automobile wreck.——Drs. Lawrence Litchfield, Irwin J. Moyer, John W. Boyce, Thomas D. Davis, Percival J. Eaton, James H. McClelland and Walter F. Edmundson have been appointed by the Pittsburg Civil Service Commission examining board for medical examiners of the public schools.——Dr. Daniel D. Heilman, Northumberland, is reported to be critically ill with tetanus in a Philadelphia hospital.

The Status of Poliomyelitis.—Owing to the large number of cases of poliomyelitis in this state, a special meeting was held at the College of Physicians on October 14 to discuss the situation. Dr. George L. de Schweinitz presided and papers by the following were read: Dr. Paul A. Lewis, of the Rockefeller Institute; Dr. Allen J. Smith, professor of pathology in the University of Pennsylvania; Dr. Charles K. Mills, professor of nervous diseases in the University of Pennsylvania; Dr. Joseph S. Neff, director of the Department of Health, and State Health Commissioner Dixon. That anterior poliomyelitis flourishes in those parts of Pennsylvania which are liberally watered but have poor drainage, even in high altitude and that there have been very few cases over gravel formations where perfect drainage of the subsoil obtained, was the interesting point brought out in the paper by Dr. Dixon. Some of the most important charts were shown that have ever been tabulated by his department. These charts were made out in columns showing the geologic formations, water distribution and elevations. The number of cases of poliomyelitis that have appeared were put down on the charts in the districts in which they occurred. Elevation apparently has no influence on the disease. To these charts will be added the distribution of vegetable and insect life in order that it may be observed whether any peculiar insect or vegetable is found in places where the disease has been most prevalent. A total of 920 cases of poliomyelitis have been reported from 50 different counties in the state during the present epidemic. Of this number there were only two cases among the colored race. Males showed a greater tendency to contract the disease than females. The outbreak began about the end of May almost simultaneously in the Lehigh Valley, in Lancaster county, in Potter county and in Philadelphia. The epidemic reached its height the latter part of August. A total of 332 cases was reported during that month. It has tended to subside in October. Out of 920 cases, 600 occurred before the fifth year of age, 163 contracting the disease before the end of the eighteenth month of life. That the studies made by the department show that the disease is not badly contagious is indicated from the following statistics: In the rural districts out of 66 households having 2 school children but one contracted the disease. In 41 households with 3 children but one contracted the disease. In 37 with 4 children only one sickened. In 33 with 5 children one sickened. In 20, with 6 children, and in 8 households with more than 6 school children, only one contracted the disease. It will thus be seen what exhaustive study the State Health Commissioner and his assistants are making to find the cause of this disease. The work will be continued vigorously both in the field and in the laboratories.

Philadelphia

Society Elects.—The Philadelphia Pathological Society at its annual meeting, October 13, reelected Dr. David Riesman, president, and elected the following officers: vice-presidents, Drs. Aloysius O. J. Kelly, Allen J. Smith, Joseph Sailer and Hobart A. Hare; secretary, Dr. Edward H. Goodman; treas-

urer, Dr. Courtland Y. White; recorder, Dr. Frederick H. Klaer, and curator, Dr. Howard T. Karsner.

Personal.—Drs. Edward P. Davis and W. Reynolds Wilson have returned from Europe.——Dr. John A. McKenna, Lansdowne, sailed for Europe October 8.—Dr. Thomas C. Stellwagon has been appointed chief of the surgical clinic of Jefferson Medical College Hospital.——Drs. George J. Schwartz and Thomas J. Buchanan have resigned from the visiting surgical staff of the Jefferson Medical College Hospital.——Dr. James B. Walker is dangerously ill at his home.

WEST VIRGINIA

Petition for State Sanatorium.—The West Virginia Fraternal Association, in session at Weston, October 6, adopted resolutions asking the state legislature to establish a state tuberculosis sanatorium, and appointed a committee to circulate petitions and to bring the matter before the legislature at its coming session.

County Medical Society Election.—The first meeting for the season of the Ohio County Medical Society was held in Wheeling, September 12, and the following officers were elected: president, Dr. William S. Fulton; vice-president, Dr. D. Bigger Best; secretary, Dr. Randolph J. Hersey; treasurer, Dr. Reed McC. Baird; censors, Drs. James G. Walden, Albertus Nichols, and Samuel L. S. Sprague; delegates to the state association, Drs. Charles A. Wingerter, Edward L. Armbrecht, and David H. Taylor, and alternates, Drs. Andrew J. P. Wilson, James G. Walden, and John J. Osborn, all of Wheeling.

State Society Meeting.—The forty-third annual meeting of the West Virginia State Medical Association was held in Parkersburg, October 5-7, under the presidency of Dr. Thomas W. Moore, Huntington. The following officers were elected: president, Dr. Charles A. Wingerter, Wheeling; vice-presidents, Drs. John E. Cannaday, Charleston, Glenn Moorman, Petersburg, and George D. Jeffers, Parkersburg; secretary, Dr. Arthur P. Butt, Davis; treasurer, Dr. Hugh G. Nicholson, Charleston, and councilors, First District, Dr. Henry B. Linsz, Wheeling; Second District, Dr. W. Holmes Yeakley, Keyser; Third District, Dr. Peter A. Haley, Charleston; Fourth District, Dr. Walter S. Link, Parkersburg, and Fifth District, Dr. Samuel R. Holroyd, Athens. White Sulphur Springs was selected as the meeting place for 1911.

GENERAL NEWS

Personal.—Dr. William Colby Rucker, U. S. P. H. and M.-H. Service, formerly health commissioner of Milwaukee, has been detailed for duty in connection with the cholera situation. ——Dr. Charles E. Ruth and family, Ponce, Porto Rico, who have been spending the summer in northern Michigan, have returned home.

Railway Surgeons in Session.—The annual meeting of the Society of Surgeons of the St. Joseph and Grand Island Railway was held in St. Joseph, Mo., October 6. A clinic was held in St. Joseph Hospital in the morning, under the direction of the chief surgeon, Dr. Charles W. Wallace, St. Joseph. The following officers were elected: president, Dr. Barton Pitts, St. Joseph; vice-president, Dr. William M. Boone, Highland, Kan., and secretary, Dr. Charles H. Wallace, St. Joseph.

National Precautions Against Cholera.—At the request of Surgeon General Walter Wyman, every American village, town and city that recently has received, or until further notice receives, any Russian or Italian immigrant will be directed to isolate him if he develops any symptoms whatever of cholera. Of 15,000 steerage passengers who have landed in the last seven days, more than half have been from Italian ports or are Russians. The two cholera patients at Swinburne Island are improving.

Health of Canal Zone.—The report of the sanitary department of the Isthmian Canal Commission for August shows 55 deaths, 31 from disease and 24 from external causes, equivalent to an annual mortality per 1,000 of 13.04, an increase as compared with 1908 when the mortality was 11.39, and 1909 when the mortality was 10.28 per 1,000. No reason for this increase is assigned. No cases of yellow fever, small-pox or plague were brought to the isthmus or originated on it during the month.

Higher Preliminary Requirements in Colorado.—Dr. S. D. VanMeter, secretary, states that the Colorado State Board of Medical Examiners, at its October meeting, adopted a resolution providing that applicants for license to practice in Colorado, graduating after January 1, 1914, will be required to furnish satisfactory evidence that, before matriculation, they had completed two years' study without conditions in an accredited college of liberal arts. The requirement of one year of collegiate work, as previously announced, becomes effective January 1, 1912.

Infant Mortality.—The American Association for the Study and Prevention of Infant Mortality will hold its first annual meeting in Baltimore November 9-11. At the opening session, addresses will be made by Hon. Jules Jusserand, the French ambassador, and by Dr. William H. Welch. The second session will be devoted to philanthropic prevention of infant mortality; the third to municipal, state and federal prevention; the fourth to medical prevention, and the fifth to educational prevention. An exhibition will be held devoted to the milk work of departments of health, medical milk commissions, the influence of feeding on infant mortality, contagious diseases conveyed by milk, and specific causes of infant mortality.

Fraternity Meeting.—The Phi Beta Pi Medical Fraternity held its twelfth annual meeting in Philadelphia October 4-7, and elected the following officers: supreme archon, Dr. Albert H. Parks, Minneapolis; supreme vice-archon, Dr. Ned O. Lewis, Kansas City, Mo.; supreme secretary, Dr. George M. Kline, Ann Arbor, Mich.; supreme treasurer, Dr. Marcel J. de Mahy, New Orleans; supreme editor, Dr. George G. Zoehrlaut, Chicago; supreme eastern pretor, Dr. John W. Holmes, Philadelphia; supreme western pretor, Dr. David S. Long, Kansas City, Mo.; supreme southern pretor, Dr. Covert B. Cooper, New Orleans, and supreme northern pretor, Dr. David D. Todd, Ida Grove, Iowa. The fraternity will convene in Detroit next year.

Meetings to Come.—The twenty-sixth annual session of the New York and New England Association of Railway Surgeons will be held at Hotel Astor, Broadway and Forty-fourth street, New York City, November 3 and 4, under the presidency of Dr. Leroy M. Bingham, Burlington, Vt. Dr. John B. Deaver, Philadelphia, will deliver the address on surgery.——The twelfth annual meeting of the Ohio Valley Medical Association will be held in Evansville, November 9 and 10, under the presidency of Dr. Albert E. Sterne, Indianapolis. The subject of his address will be "The Question of Exercise."——The International Medical Society, consisting of representatives from Mexico, United States and foreign countries will meet in El Paso, Texas, October 27-29. Drs. von Ehrlich, Berlin, and Charles Wardell Stiles and Claude H. Lavinder of the U. S. P. H. and M.-H. Service, will deliver addresses.

Meeting of Southwestern Physicians.—The fifth annual meeting of the Medical Association of the Southwest was held in Wichita, Kan., October 11 and 12, under the presidency of Dr. George H. Moody, San Antonio, Texas. The following officers were elected: president, Dr. Middleton L. Perry, Parsons, Kan.; vice-presidents, Drs. John M. Griffin, Sulphur Springs, Ark.; William H. Stauffer, St. Louis; Everett S. Lain, Oklahoma City, Okla., and Wilmer L. Allison, Fort Worth, Texas, and secretary-treasurer, Dr. Fred H. Clark, El Reno, Okla (reelected), and executive committee, Drs. William A. Wood, Hubbard, Texas; Samuel S. Glasscock, Kansas City, Kan.; St. Cloud Cooper, Fort Smith, Ark., and Jefferson D. Griffith, Kansas City, Mo. Oklahoma City was selected as next meeting place. A state department of health, as suggested by the Owen bill, was endorsed by the association.

Millions for Medical Research.—At the meeting of the board of trustees of the Rockefeller Institute for Medical Research, in New York City, October 17, the occasion of the celebration of the opening of the new hospital described below, it was announced that Mr. Rockefeller had given $3,820,000 additional to the institute, thereby making his total gifts to this institution $8,240,000. The institute property has been placed absolutely in the hands of the board of trustees, consisting of John D. Rockefeller, Jr., Frederick T. Gates, William E. Welch, Starr J. Murphy and Dr. Simon Flexner. The function of the trustees is to hold and care for the property of the institute, including investment of endowment funds, and to hold the entire income under the control of the board of scientific directors, composed as follows: Dr. William H. Welch, Baltimore, president; Dr. L. Emmett Holt, New York City, secretary-treasurer; Dr. Simon Flexner, New York City, director of laboratories, and Drs. T. Mitchell Prudden, Christian A. Herter and Hermann M. Biggs, New York City, and Theobald Smith, Boston.

New Methods of Instruction at Syracuse.—A number of important changes made in the arrangement of courses at the College of Medicine of Syracuse University will be interesting to those who are trying to solve the problems of medical

education. These changes provide for the completion of the course in anatomy during the first year. This work will hereafter be in charge of Professor Henry W. Stiles, who comes to Syracuse University from Tulane University. He will be assisted by Dr. Robert H. Haskell, formerly of the University of Michigan. Physiologic chemistry is planned for the second semester of the first year and the first semester of the second year. As a prerequisite, a review course in general chemistry will be given during the first semester of the first year. Although the course in physiology is not to be changed during the present session, it is intended in the near future to provide for the completion of all work in this subject during the second year. The course in obstetrics has been arranged so that all the work in that subject may be completed during the third year. The rearrangement in surgery provides that all clinical work for the third and fourth year students will be taken in the forenoons. Provision has been made so that hereafter students in medicine will be assigned to cases in hospitals thereby having the opportunity for clinical investigation under the supervision of the attending staff. The students will also be given clinical laboratory work in a hospital, will act as clinical clerks and attend numerous section clinics. It is planned to correlate clinical work with that of the department of pathology and bacteriology. With this object in view an additional course has been provided in the bacteriologic examination of patients in hospitals and a second course in post-mortem examinations. Furthermore, a clinical and pathologic conference including one hour per week for the third and fourth year classes has been scheduled. At this conference it is intended that medical and surgical cases on which autopsies have been held during the preceding week are to be discussed. Clinical histories and records as well as the laboratory findings will be shown, the object being to present in a clear and concise manner all data having a bearing on a clinical diagnosis.

The New Hospital of the Rockefeller Institute.—The opening of the new hospital of the Rockefeller Institute for Medical Research in New York marks an advance in the organization and scope of this institution of noteworthy significance to practice as well as to research in medicine. The hospital is located on the grounds of the institute near the laboratory buildings but separate from them and is open on all sides to light and air. There is a separate building for the isolation and care of cases of communicable diseases. This building with its eight stories and an isolation pavilion, and with so complete an equipment, provides accommodations for only seventy. The reason for this is that the hospital was built not to add seventy beds to the facilities in New York for caring for the sick or injured, but to undertake a work which is not largely carried on in existing institutions. Their purpose is essentially philanthropic and educational, and only secondarily scientific. The primary purpose of the institution, however, is to advance the knowledge of clinical medicine, especially in the nature, diagnosis and treatment of disease. This can best be accomplished by the closest possible study of a very few patients, and the object sought can best be reached by attacking different medical problems singly and concentrating the entire energies of the institution on one or two or three of them. The problems to be taken up are not likely to be those of a rare or unusual nature, however interesting, but some of the most pressing problems of the day. Thus it is proposed to take up at first acute pneumonia and certain forms of heart disease, and of affections of disturbed metabolism, and infantile paralysis; the purpose being to determine by the most minute observations in the care and treatment of these few the best means of caring for the great majority of those who are suffering from these diseases. It has a medical and nursing staff which is relatively large in comparison with those of most other hospitals. One entire floor of the building is devoted to clinical laboratories, chemical, biologic, physiologic and photographic, for more accurate diagnosis and observation and the development of exact methods of treatment. The endeavor has been made to secure the best environment for persons under treatment—space and air and agreeable surroundings. The most ample provision has been made for the open-air treatment for patients suffering from both acute and chronic disease. There is a special diet kitchen in which all food can be prepared with scientific precision when this is required. There is a department of hydrotherapy and electricity. Another unique feature in the organization of the hospital is that the members of the medical staff will devote their entire time to the work of the hospital. They will receive salaries and will not be allowed to practice outside of the hospital or to receive any fees from patients. They will, therefore, have no other interest than the welfare of the patients under their care and the securing of such new knowledge of disease and its treatment as the exact observation and methods now made practicable promise to afford. The hospital contains few large wards, the largest holding but eight beds, but there are numerous single rooms for special cases where the best environment can be secured. Many of these single rooms have private baths connected with them. No fees are to be charged to any patients. The isolation pavilion provided for infectious diseases is entirely separate from the main hospital and has been planned in such a way that it will be possible to treat any form of infection with entire safety to the other occupants of the hospital. This makes it possible at any time for the institute to study any new phase of infectious disease which may appear in the city or in the community and greatly adds to the possibility of the usefulness of the institute.

Memorial to Finsen.—A monument to Finsen, the pioneer in scientific phototherapy, was recently unveiled at Copenhagen, erected by subscriptions from members of the profession, former patients and others at home and abroad. It stands on a prominent open corner with the large new public hospital in the background. The base of the monument is a huge, rough boulder, bearing the simple inscription, "To the Memory of N. R. Finsen, 1860-1904." It is surmounted by a group of three colossal figures representing Finsen standing, apparently invoking the light, and two female figures at his feet. Finsen's career reads like a romance; from the Faroe Islands, near Iceland, where he was born, to a Nobel prize and funeral with international honors, all in 43 years, most of them handicapped with severe heart disease!

CANADA

Seeks Reciprocity.—New Brunswick is making an effort to secure reciprocity with Great Britain, and has made application to the General Medical Council for this purpose. Nova Scotia and Prince Edward Island have already reciprocal arrangements with Great Britain.

Personal.—Drs. George A. Armstrong, and Frederick G. Finley, Montreal, and John A. McCollum and Samuel Cummings, Toronto, have gone abroad.——Dr. Charles Sheard, medical health officer of Toronto, has resigned.——The class of 1892, Toronto University, has elected Dr. Henry J. Way, Chicago, president.

McGill College Opens.—The opening lecture of the session of the McGill Medical Faculty was delivered October 3, by Dr. William Hunter, London, who spoke on "Antisepsis in Medicine." The new Medical building is in use for the first time. It contains the departments of anatomy, pathology, and bacteriology, a medical museum, and medical library.

Hospital Notes.—A new hospital is to be erected at New Westminster, B. C., at a cost of $200,000. The present hospital accommodates only forty-five patients, but as many as eighty-five have been in residence at one time.——The tuberculosis Dispensary at St. John, N. B., is to be opened Thursday afternoons for children, and parents are advised to take to the dispensary for examination all children who have been exposed to the disease.

Association Meetings.—The following officers were elected at the meeting of the Alberta Medical Association: president, Dr. L. S. Mackid, Calgary; vice-presidents, Drs. John Park, Edmonton, Walter S. Galbraith, Lethbridge, and Andrew W. Park, Cochrane, and secretary-treasurer, Dr. Thomas H. Whitelaw, Edmonton.——The College of Physicians and Surgeons of Quebec has elected the following officers: president, Dr. Louis P. Normand, Trois Rivières; vice-presidents, Drs. Art A. Simard, Quebec, Henry A. LaFleur, Montreal, and L. Arthur Lessard, Granby, and registrar, A. P. Gauvreau, Montreal.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, OCT. 8, 1910.

Coroner's Jury Comments on an Unsuccessful Operation

The verdict of the coroner's jury, usually composed of persons uninstructed on medical questions, is sometimes far from enlightened and may be harmful, as the following case shows. A man died three hours after an operation for intestinal obstruction at the Preston Infirmary. For some reason, the coroner thought that it was his duty to hold an inquest, although that is not necessary in cases of the kind. The medical evidence was to the effect that the man could not have lived more than a few hours if the operation had not

been performed, and that it gave him his only chance of life. The house surgeon stated that during the three years he had been at the infirmary there had been a dozen such cases which he had not reported to the coroner. If inquests were held in all such cases the result would be that physicians would not undertake the responsibility of performing operations and the odium attached to them. They had to consider their own reputation. However, the coroner rejoined that he failed to see why the operation should not be done "because there was a certain amount of publicity attached to it." Another surgeon gave evidence to the effect that he had operated in nine similar desperate cases in three years and that 5 of the patients were living today. "Whatever was said outside doctors must do their best." The verdict was that the man "died about three hours after an operation for obstruction of the bowels, and that his death was accelerated by the operation." One juryman had the sense to protest against the latter portion of the verdict, because it might frighten the public into not allowing their relatives to undergo operations. There does not seem to have been any evidence that life was shortened in this case by the operation and therefore the latter part of the verdict was speculative and unjustified.

Medical Literature for China

Professor Osler's "Principles and Practice of Medicine" has been translated into Chinese by Dr. P. B. Cousland, president of the China Medical Missionary Association, Shanghai. This undertaking has engaged Dr. Cousland for several years. The book is the only first-class work on medicine that has so far been translated into Chinese. Other translations are in progress. Dr. Cochrane, of Peking, is translating Heath's "Anatomy;" Dr. McAll, of Han-kau, Stengel's "Pathology;" Dr. Cormack, of Peking, Hutchinson and Rainey's "Clinical Methods;" and Dr. Neal, of Tsi-nan, Fuch's "Ophthalmology." A new and compact "Systematic Anatomy" is also passing through the press. An atlas of beautiful anatomic plates has just been printed for the China Medical Missionary Association by the Oxford Press at a cost apart from the letterpress of $2,500, a part of which has been contributed by the China Emergency Appeal Committee. As dissection of the human body is not yet allowed in China such plates are of great importance.

Yellow Fever in West Africa

Sir Robert Boyce, of the Liverpool School of Tropical Medicine, who has just returned from an expedition to West Africa, at the Liverpool Chamber of Commerce made an important report on yellow fever in that country. He states that in a short time we shall be in possession of facts which will throw great light on the diseases of the West African coast. He has come to the conclusion, as a result of his own observations, reading and inquiries, that yellow fever is endemic to the west coast of Africa and that for years it has been mistaken for malaria. In Sierra Leone, yellow fever has never been absent since 1806, and it always attacks those who have most recently arrived. It is even described by the natives as "the disease of the newcomers." But the mortality of Sierra Leone has greatly improved. One cause is the use of mosquito nets and greater care in living generally. It is the *Stegomyia calopus* which is the cause of the trouble. It has been said that this mosquito is difficult to tackle, but it is the easiest to get rid of. If the attacks on this mosquito were kept up, soon nothing more would be heard of yellow fever and the death-rate on the coast would go down with a run and many other diseases would disappear.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Oct. 7, 1910.

Twenty-Third Meeting of the French Surgical Association

The Association française de chirurgie held the opening session of its twenty-third meeting on October 3, under the presidency of Dr. H. Delagenière, surgeon of the hospitals of Le Mans and corresponding member of the Académie de médecine. None of our medical meetings is more interesting than this one. The proof is not only in the number of the members of the association, which increases each year, but in the number and high standing of the foreign surgeons who attend it. This year they were particularly numerous. Among them were Sir Victor Horsley of London, Professors Czerny of Heidelberg, Kocher of Berne, von Eiselsberg of Vienna, Tavel of Berne, Girard of Geneva, Ceci of Pisa, Jonnesco of Bucarest and Phocas of Athens.

Dr. Delagenière opened the meeting with an interesting paper on a very practical subject, "The Surgical Hour in Visceral Pathology or the Surgical Period in Certain Internal Diseases." For a long time, he said, surgeons have been accusing physicians of sending patients to them too late, to the loss of the patient and of surgery. Is not excessive specialization one of the causes of this condition? Specialization ought to exist only in practice, for the medical sciences form a whole whose complete knowledge is indispensable to every practitioner. The resources of surgery are incompletely and imperfectly known to most physicians. And yet, almost all visceral diseases present a period in their evolution during which surgical intervention may be tried with success, either for re-establishing the physical function of the organ or arresting the morbid process. This period passed, either the organ is destroyed from the physiologic point of view or the disease can no longer be arrested and the operation cannot cure the patient radically. Each visceral disease has its surgical hour, so to speak, and it is when this hour has struck that operation presents both the greatest simplicity and the greatest security.

Hostility to Ehrlich's "606"

Some French professors have been very skeptical in regard to the new remedy for syphilis and have gone so far as to carry the discussion, which ought to have remained on a purely scientific ground, into the lay papers. An interview which Professor Bouchard gave on the subject to a morning paper appeared under headings derisive of the remedy. It is extremely probable that Professor Bouchard did not say all that is attributed to him in the paper, and this seems to be well understood even in Germany, where the *Medizinische Klinik* of September 25 published a note blaming the Paris correspondent of a German lay paper for speaking unpleasantly of Bouchard. These squabbles are altogether out of place and it is to be regretted that Dr. Ehrlich himself did not hesitate to write to one of our lay journals, which naturally hastened to publish his letter.

Among us "606" has found a particularly bitter and violent opponent in Dr. Hallopeau, former physician of the Saint-Louis Hospital, who, after having published a criticism of "606" in a number of political journals, attacked it at the Académie de médecine October 4. According to him "606" does not fulfil the conditions of harmlessness and of constancy of effect which alone would justify the interest taken in it. There have been, he says, fourteen deaths from its use, two in Paris, besides cases of blindness.

These criticisms, circulated by the lay press, aroused active objections in the academy. Dr. Netter, *agrégé* professor at the Paris medical college, expressed surprise at hearing Hallopeau denounce systematically a drug which Ehrlich studied with so much care before putting it in general use. The deaths mentioned by Hallopeau could not be considered as due to the drug; as for the cases of blindness, Netter had heard of none. He believed that one should give credit to a man of such high standing and great scientific probity as Professor Ehrlich.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 29, 1910.

Personal

Professor Payr of Greifswald has been called to Königsberg as director of the surgical clinic to succeed Professor Lexer, who goes to Jena. Payr's successor is Prof. Fritz König of Altona, a son of the noted Berlin surgeon.

Ehrlich on His "606"

At the eighty-second session of German scientists and physicians, the Naturforscher Congress, just held at Königsberg, one meeting was devoted to the discussion of Ehrlich's new remedy and he made the following interesting statements with reference to "606."

The specific action of the remedy was recognized in animal experiments and is shown especially by the fact that on the application of a sufficient dose the spirochetes disappear in from 24 to 48 hours. If the time required is longer, either the dose was too small or the spirochetes in question are immune to arsenic. The second fact which has developed is that specific antibodies are produced. It appears that treatment with "606" furnishes an unusually favorable opportunity for the demonstration of these antibodies. The first important observation was that the milk of a mother who was nursing a syphilitic child and was herself treated and cured with "606," had a remarkably favorable action on the child. A similar result has been noticed in a large number of nursing women.

The arsenic content of the milk is extraordinarily small, so that it is evident that the milk must contain antibodies which are received into the stomach of the child and absorbed. From other sources it is known that if the serum of such patients is injected into syphilitic children the symptoms of the disease disappear. While it is evident that specific antibodies are formed, Ehrlich is of the opinion that the serum treatment alone is not sufficient for a positive cure. For if of a thousand spirochetes only a few survive, they are sufficient to prevent a complete cure. If children are injected with serum an extraordinarily prompt curative action is observed at first; the exanthemata very promptly disappear. But after 6 or 7 days other disturbances develop testifying that the antibodies were insufficient to destroy all the spirilla. It is therefore best to give such a child, soon after, a sufficient injection of "606" to kill the rest of the spirochetes.

The second specific action is on the Wassermann reaction which is certainly connected with the presence and growth of the spirilla. The very interesting observation has been made, that in certain affections a negative Wassermann reaction becomes at first positive under the influence of the injections. For instance, in chancres at an early period, the number of spirochetes is so small that they are not capable of producing a positive reaction. If now the previously negative reaction is at once converted into a positive one, evidence is furnished for the actual syphilitic nature of the disease. The importance of this reaction in the treatment with "606" cannot be sufficiently emphasized, he declared. If by the therapeutic action, only 100 out of 1,000,000 spirochetes survive, no reaction will occur, but every positive reaction is to be regarded as analogous to a relapse and is therefore an indication for the repetition of the treatment with "606." Such cases should be examined at sufficient intervals and kept under observation. It would be very desirable if a modification of the Wassermann reaction could be made so that the practitioner could apply this important test to his patients.

A third action which is very hard to explain consists in the fact that the remedy often works with wonderful rapidity. The statement has been made from many sources that patients, for instance, who had not been able for months to swallow any solid food on account of disease of the fauces or tonsils could do so immediately after an injection. This remarkable rapidity of action is not to be explained by anatomic changes but depends on the removal of the pain, which was due to the action of the products of the secretion of the spirochetes; "606" acts in this case as an antineuralgic. On the other hand, it has been occasionally observed that increased sensitiveness occurs in some patients similar to what has been observed after mercurial injections. The first observations in this line come from Italy where extraordinary caution was at first used and doses of from 0.025 to 0.05 gm. (½ to 1 grain) were employed. The spirochetes recovered themselves after a short time; they were not destroyed by the weak remedy but stimulated so that the result was a greater secretion of toxin. Ehrlich has always regarded the remedy as an arsenical and a dangerous remedy and has therefore insisted on the necessity of a thorough preliminary testing of it. No one can expect complete harmlessness in a remedy which is to kill parasites. The mortality as a result of the remedy depends exclusively on the constitution of the patient, a law which holds for all dangerous remedies, even for chloroform. Ehrlich has now reports of the use of "606" in 10,000 cases. The results have shown that "606" is not especially dangerous. In this large number of cases there is only one in which death immediately followed the administration of the remedy, and this was the case of a female patient whose disease, tertiary syphilis, must have eventually resulted fatally. In this case the injection was made with the acid solution and there was a certain shock which would be avoided with the newer preparation. All other fatalities, of which the number might reach a dozen, occurred in cases of severe nervous disease, tabes and the like, in which the prognosis at least was very doubtful. If in such desperate cases unfavorable results ensue, it must not be said that the remedy is dangerous. Such extremely dangerous experiments must be undertaken if one has the conviction that he can save the patients in that way. Ehrlich does not consider the remedy indicated in cases of severe paralysis, for even if a cure resulted the patients could not be expected to become useful members of human society. A second contraindication is furnished by diseases of the heart and blood vessels in which one must be very cautious. As to the technic, the alkaline solution which was first introduced by Alt and Iversen has the slight disadvantage of being somewhat painful while the neutral injection has the advantage of lessened painfulness. For that reason the neutral emulsion should be preferred in neurasthenic and alcoholic persons and in patients sensitive to pain. Probably in future a combination of both methods with the use of both intravenous and subcutaneous injections may be adopted. The dose depends on the nature of the disease. A general dosage cannot be given. In nervous affections 0.4 gm. (6 grains) should not be exceeded for these oversensitive individuals react very unpleasantly on the part of the heart and central nervous system. Moreover in these central nervous affections the number of spirochetes is very small and a smaller amount of the remedy is probably sufficient for their destruction. It has been established that from 16 to 20 per cent. of the paralytics have lost their Wassermann reaction. These patients have not regained the reaction in a period of two years and this fact gives a most hopeful outlook for the future. In general Ehrlich agrees with Neisser that one should try to give doses large enough to secure a cure by the first injection. In a relatively healthy person a dose as high as 0.8 to 1.0 gm. (12 to 15 grains) or even higher can be given without danger. Finally Ehrlich notes that the remedy is also active in other diseases. Among these the most prominent is frambesia which is very nearly related to syphilis, next chicken cholera and certain forms of malaria. The fact has been independently established from various sources that a single subcutaneous dose was sufficient for the removal of fever in malaria. Also in two small-pox cases the remedy had an apparently favorable effect.

Marriages

G. M. WYATT, M.D., to Miss Elam, both of Dewey, Okla., September 28.

HENRY B. KOLB, M.D., to Miss Mary Cookran, both of Baltimore, October 5.

ELVA C. MACKE, M.D., to Miss Rena Rust, both of Evansville, Ind., October 5.

LEWIS E. MISSIMORE, M.D., to Mrs. Lucille Alexander, both of St. Louis, October 5.

HERBERT W. HEWITT, M.D., to Miss Sila M. Hovey, both of Detroit, October 1.

HARRY ISAAC WIEL, M.D., to Miss Sarah Lilienthal, both of San Francisco, October 2.

CARL TILLMANNS, M.D., to Miss Lucy Bakehouse, both of Sigourney, Iowa, July 13.

CHARLES W. RILEY, M. D., Baltimore, to Miss Helen Cruikshank, at Baltimore, October 4.

JOHN CROCKETT EASTON, M.D., to Miss Mabel Prince, both of Springfield, Ohio, October 11.

SILAS MERCER MOORMAN, M.D., to Miss Frances Ditweiler, both of New York City, recently.

ROZELL MCGLATHERY, M.D., Oil City, La., to Miss Margery Frances Lloyd of Chicago, October 12.

CLARENCE LE R. COLE, M.D., U. S. Army, to Miss Hoff, at Whipple Barracks, Ariz., September 21.

PHILIP HENRY WEBER, M.D., Elmhurst, Cal., to Miss Ruby Hughes of San Francisco, recently.

JAMES A. BOND, M.D., Parkersburg, W. Va., to Miss Bertha George, at Glen Marcy, Md., October 1.

LEMUEL BYRD SHORT, M.D., East St. Louis, Ill., to Miss Josephine Hill of Fillmore, Ill., recently.

JAMES H. BOULTER, M.D., Detroit, to Miss Evaline Crawford of Denver, at Hamilton, Ont., October 12.

JOHN A. DUNCAN, M.D., Upham, N. D., to Miss Grace Margaret Kinghorn of Toronto, Ont., September 21.

HOLLAND TODD GROUND, M.D., Aberdeen, S. D., to Miss Martha Grace McDonnell of Chicago, October 15.

BERNARD HAMLIN GLENN, M.D., Fowlerville, Mich., to Miss Nellie Deborah Lansing of Howell, Mich., September 7.

FRED WARREN MCCAW, M.D., Mount Union, Iowa, to Miss Myra Russell Patterson of Winfield, Iowa, September 29.

WILLIAM HENRY CANTLE, M.D., Mamaroneck, N. Y., to Miss Mary Elizabeth Cullen of Middletown, Conn., September 30.

THOMAS P. GUILFOYLE, M.D., Cherry, Ill., to Miss Kathleen Helen Dwyer of Arlington, Ill.; at Peoria, Ill., September 29.

JOSEPH HOWARD HODGES, M.D., Harpers Ferry, W. Va., to Miss Edna Bell Hendricks, at Shenandoah Junction, W. Va., October 12.

Deaths

DeForest Willard, M.D. University of Pennsylvania, Philadelphia, 1867; died at his home in Lansdowne, Philadelphia, October 14, from double pneumonia complicating acute multiple neuritis, aged 64. He was a member, and in 1902 chairman, of the Section on Surgery of the American Medical Association; president of the American Orthopedic Association in 1890; of the Philadelphia County Medical Society in 1892, and of the American Surgical Association, and the Philadelphia Academy of Surgery in 1902, and a fellow of the Philadelphia College of Physicians; professor of orthopedic surgery in the University of Pennsylvania since 1889; surgeon to the Presbyterian and University hospitals; consulting surgeon to the Germantown, Jewish, Atlantic City and Phœnixville hospitals, and surgeon in chief of the Widener Training School for Crippled Children.

Dr. Willard was author of a text-book on "Artificial Anesthesia," published in 1891; and of a work on "Surgery of Childhood, Including Orthopedic Surgery," published in 1909; and numerous monographs on surgical and orthopedic subjects; acting assistant surgeon under the auspices of the United States Sanitary Commission at the Second Corps Base Hospital, City Point, and at the Fairgrounds Hospital, Petersburg, Va., and attending medical officer of the Centennial Exposition in 1876.

Dr. Willard was progressive. He was not only one of the leading orthopedists of the country but also a most notable surgeon. He was a man with hosts of friends and without an enemy.

DeForest Willard, 1846-1910

J. V. Shoemaker, 1858-1910

TWO PROMINENT PHILADELPHIANS

John Veitch Shoemaker, M.D. Jefferson Medical College, 1874; died at his home in Philadelphia, October 11, from acute nephritis, aged 52. He was a member of the American Medical Association and trustee from 1890 to 1893; American Academy of Medicine; Association of Military Surgeons of the United States; British Medical Association and London Medical Society; formerly secretary, vice-president and president of the American Medical Editors' Association and president of the American Therapeutic Association; demonstrator and lecturer on anatomy and lecturer on cutaneous affections in Jefferson Medical College from 1874 to 1886; professor of cutaneous diseases and materia medica and therapeutics since 1886 in the Medico-Chirurgical College, and president of the institution since 1890; senior physician to the Medico-Chirurgical Hospital; founder of the *Medical Bulletin* in 1879, and *Medical Register* in 1887; and editor of the *Medical Times and Register*.

He was surgeon-general of the State of Pennsylvania from 1898 to 1902; and during the Spanish-American War raised the necessary funds and presented to the State of Pennsylvania a fully-equipped hospital train for the transportation of its sick soldiers from Camp Alger, Va. He was commissioned first lieutenant, Medical Reserve Corps, U. S. Army, in 1908.

Dr. Shoemaker was a prolific contributor to the literature of dermatology, materia medica and therapeutics and served as president of the Board of Charities and Corrections of the City and County of Philadelphia since 1901.

Benjamin Franklin Dixon, M.D. Medical College of the State of South Carolina, Charleston, 1874; of Raleigh, N. C.; a veteran of the Civil War and major of the Second North Carolina Infantry, U. S. V., during the Spanish-American War; formerly superintendent of the Masonic Orphan Asylum, Oxford; later president of the Greensboro Female College, and since 1900, state auditor; died at Rex Hospital, Raleigh, North Carolina, September 26, from angina pectoris, aged 65.

T. Floyd Woodworth, M.D. Ohio Wesleyan University, Cleveland, 1869; formerly a member of the American Medical Association; a member of the Medical Society of the State of New York and president and secretary and treasurer of the Columbia County Medical Society; for several terms coroner of Columbia county; health officer of Kinderhook, and local United States pension examiner; local surgeon of the New York and New England and Albany and Hudson Railways; died recently at the Ann May Hospital, Spring Lake, N. J., from heart disease, aged 78.

Gustavus Lincoln Simmons, M.D. Harvard Medical School, Boston, 1856; a member of the American Medical Association; formerly physician of Sacramento county; president of the Medical Society of the State of California in 1893; secretary and president of the Sacramento Board of Education; a member of the local board of pension examiners; surgeon of the Fourth Infantry, N. G., Cal.; for more than twenty years a commissioner in lunacy and a member of the local board of health; died at his home, October 4, aged 78.

Samuel Dutton Gilbert, M.D. Yale University, New Haven, Conn., 1871; of New Haven, Conn.; a member of the American Medical Association; president of the Connecticut State Medical Society; attending physician to New Haven Hospital; died between Dover, England, and New York on board steamer *Lapland*, September 27, from pneumonia, aged 62. The New Haven Medical Association, at its meeting October 3, adopted suitable resolutions regarding the death of Dr. Gilbert and appointed honorary pallbearers.

Patrick Henry Jameson, M.D., Jefferson Medical College, 1849; a charter member of the Indiana State Medical Association; founder of the Indianapolis City Hospital; during the Civil War in charge of the Military Hospital, Indianapolis; a member of the city council from 1863 to 1869; a member of the board of trustees of the Indiana Hospital for the Insane from 1861 to 1868; physician to the Indiana Institute for Deaf and Dumb from 1861 to 1869; from 1869 to 1879 president of the boards in charge of the benevolent institutions of the state; for thirty years a trustee of Butler College; died at his home in Indianapolis, October 7, from senile debility, aged 86.

Temple B. Smith, M.D. Marion Sims College of Medicine, St. Louis, 1892; a member of the Louisiana State Medical Society; president of the Lake Charles Board of Health; local surgeon for the Southern Pacific and Kansas City Southern railways; died in St. Patrick's Sanitarium, Lake Charles, October 3, from the effects of a gunshot wound of the abdomen inflicted by his wife during a quarrel a week before, aged 46.

Charles Edwin Miles, M.D. Worcester (Mass.) Medical College, 1859; vice-president of the National Eclectic Medical Association; for several years chairman of the Massachusetts Board of Registration in Medicine; and assistant editor of the *Massachusetts Medical Journal;* a member of the Boston School Committee; died at his home in Roxbury, October 1, from pneumonia, aged 79.

George U.Runcie, M.D. Northwestern University Medical School, 1880; University of Louisville, 1890; a member of the Indiana State Medical Association; from 1889 to 1893 physician to the Indiana State Prison South, Jeffersonville; local surgeon to the Evansville and Terre Haute Railroad; died at his home in Poseyville, October 2, from cerebral hemorrhage, aged 52.

William W. Hamilton, M.D. Hospital College of Medicine, Louisville, 1879; of Meridian, Miss; a member of the American Medical Association; one of the founders, and secretary, and professor of obstetrics in the Mississippi Medical College, Meridian; health officer of Lauderdale county; local surgeon of the Southern Railway; died on a Southern Pacific train in Lafayette, La., October 8, from cerebral hemorrhage, aged 52.

Jacob Miller Hinson, M.D. Hahnemann Medical College, Philadelphia, 1886; of Brookline, Mass.; for many years ophthalmic surgeon to the Massachusetts Homeopathic Dispensary and Burrage Hospital; assistant in the Massachusetts Homeopathic Hospital; died suddenly in Saratoga, N. Y., October 4, from heart disease, aged 45.

Cornelius Gilman Trow, M.D. College of Physicians and Surgeons, New York City, 1872; of Sunderland and South Deerfield, Mass.; a member of the Massachusetts Medical Society; chairman of the school committee of Sunderland and trustee of the public library; died at his home in Sunderland, October 7, from laryngitis, aged 63.

George F. Cook, M.D. Medical College of Ohio, Cincinnati, 1872; a member of the Ohio State Medical Association and American Medico-Psychological Association; founder and physician-in-charge of the Oxford Retreat; president of the Oxford National Bank; died at his home, September 21, from chronic bronchitis, aged 64.

William Watson Gailey, M.D. Philadelphia College of Medicine and Surgery, 1863; of Ashland, Ill.; for many years a member of the Illinois State Medical Society; a medical cadet during the Civil War; died in Maplewood Sanitarium, Jacksonville, Ill., September 27, from uremia, following chronic nephritis, aged 68.

Frank Blair Olhausen, M.D. University College of Medicine, Richmond, 1898; a member of the Medical Society of Virginia; for several years local surgeon for the Baltimore and Ohio and Southern railways at Harrisonburg, Va.; died at his home in that city, October 8, from cirrhosis of the liver, aged 34.

Milo Wakely Scott, M.D. Rush Medical College, Chicago, 1877; for several years a practitioner of Grand Forks, N. D., and county physician and coroner; a member and treasurer of the first capitol commission which located the state capital at Bismarck; died at his home in Los Angeles, September 4.

Joseph Janney Hull, M.D. New York University, New York City, 1858; a member of the New York Pathologic Society; and for many years consulting surgeon to the Nursery and Children's Hospital; died at his home in New York City, August 26, from arteriosclerosis and myocarditis, aged 76.

Henry Jayne, M.D. University of Michigan, Ann Arbor, 1865; a veteran of the Civil War; mayor of Taylorville, Ill., from 1891 to 1893, and for four years postmaster of that city; died at his home, September 10, from nephritis, aged 73.

George A. E. Carey, M.D. Cincinnati College of Medicine and Surgery, 1864; assistant surgeon of the First Ohio Volunteer Heavy Artillery during the Civil War; died at his home in Indianapolis, October 11, from arteriosclerosis, aged 77.

Frank Horace Lower, M.D. Cleveland Medical College, 1894; of Cleveland; a member of the staff of the Huron Road Hospital; died at Lakeside Hospital, Cleveland, September 28, from general paresis, aged 42.

Pharmacology

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

PERFECTED OXYGENOR KING*

W. A. Puckner and L. E. Warren

A decade ago Dr. N. C. Morse of Eldora, Iowa, called attention[1] to three mechanical frauds which he had investigated and which were being exploited for the cure of disease. These instruments were known, respectively, as the "Electropoise," the "Oxydonor Victory" (Fig. 1), and the "Oxygenor King" (Fig. 2).

The "Electropoise" consisted of a metallic cylinder, called "Polizer," 3½ inches in length and weighing about 5 ounces, to which an uninsulated cord was attached. To the distal end of the cord a small disc was attached and by means of an elastic band and buckle the disc could be fastened to the wrist or ankle of the patient. On sawing into the "Polizer" it was found to be hollow and empty. The price of this instrument was $10.00.

The "Oxydonor Victory" resembled the "Electropoise" very closely. Its cylinder, called the "Vocor" was composed of brass, was 2⅝ inches in length and its weight was about 5 ounces. Inside the cylinder a stick of carbon, such as is used by electricians, was found sealed at either end by sealing wax. The price of this appliance was originally $35.00, but at the time of Dr. Morse's investigation it could be purchased for $10.00.

The "Oxygenor King," while similar in a general way to the other instruments, was somewhat more complex. It consisted of a brass cylinder 5½ inches in length and weighed 24 ounces from each end of which an insulated cord extended, one terminating in a copper disc and the other in a disc of zinc, the discs being intended to be fastened to the limbs of the patient. On cutting into the cylinder of the "Oxygenor King," it was found to be filled with a mixture of powdered charcoal and sulphur. The price of "Oxygenor King" was $25.00 net cash.

WHAT THE COURTS SAID

Nothing in the composition of any of these instruments could possibly generate the smallest quantity of oxygen, ozone or electricity. Other than their influence as "faith healers" Dr. Morse concluded that none of them could have any "more medical virtue than a copper wire attached to a stove lid or a tin can filled with brimstone and charcoal." Dr. Morse also called attention to the fact that Dr. Hercules Sanche, the promoter of "Oxydonor Victory," had attempted to invoke the power of the courts to prevent the sale of the "Oxygenor King" but that the United States courts had decided that his instrument was not of sufficient value to entitle it to the protection of a court of equity. The matter was in the courts for sometime and when the case was finally disposed of, THE JOURNAL commented on the matter editorially in part as follows:[2]

"The court stated that these and similar fakes can not have the indorsement of the courts when the pretended inventor can not make or refuses to make an explanation. The court admitted that reputable witnesses testified that when sick they used some of these devices, and that they were restored to health; but the court goes on to say that there is nothing to prove that this sequence of events is in the nature of cause and effect. He remarks: 'It would be just as reasonable for an Iowa farmer to say his barn was not destroyed by the last thunderstorm because there was a lightning rod on Mount Pisgah, as for a man to say that his restoration to health was brought about by the use of an Oxydonor or an Oxygenor.'"

THE OXYGENOR KING

The "Oxygenor" is now called the "Perfected Oxygenor King." One of these instruments was recently examined in

* This and similar fakes are commented on editorially in this issue.

1. THE JOURNAL A. M. A., Dec. 1, 1900, p. 1404.
2. THE JOURNAL A. M. A., Jan. 11, 1902, p. 135.

the Association Laboratory. In an advertising circular this apparatus is thus described:

The Perfected Oxygenor King is a scientifically constructed instrument capable of curing all curable diseases without drugs, employing only the oxygen of the air.

It consists of a metal cylinder, especially charged with a delicately adjusted but permanent combination of rare and costly metals, chemical agents and conductive elements, and called a generator.

From the description given in the circular it appears that the "generator" is a small nickel-plated cylinder, closed at each end by means of a screw cap. To each of the two caps an insulated wire several feet in length is fastened, terminating in a metallic plate—one a zinc plate to be fastened to the ankle of the patient, the other a copper plate for the wrist. A third wire called a "force-controlling cord" joins the two others at a short distance from the cylinder and may be attached to the cylinder at one of the several points by means of a screw connection.

HOW IT IS SUPPOSED TO WORK

The method of applying this instrument is simplicity itself. There is but one requirement, namely, that the generator be placed in a temperature thirty to sixty degrees below that of the body. This is done by placing it on a window-sill, on the floor, or in a basin of cool water.

The patient then attaches the green cord to his ankle, the red cord to his wrist, and sits down, reclines on a couch or retires to bed.

The instrument produces its curative effects without further notice or effort on the part of the patient, and usually without any sensation of any kind whatever except the diffused, pleasurable feeling that comes with an increase in bodily vitality.

Under certain circumstances, however, the patient will break out into a gentle perspiration, and for this reason he should be careful to avoid a draught.

It is possible, also, that with the force-controlling cord at "strong" he may experience some inconvenience. This can be remedied by attaching it to the weak connection, or "6" post.

According to one portion of the circular the "instrument has been designed "to control and adapt. . . . the force governing change," whatever that may be, and its curative properties are claimed to reside in this power. In another part of the circular the reader is led to believe that disease is caused by imperfect power to absorb ozone through the skin (!) and that the use of the "Perfected Oxygenor King" restores this deficiency, thereby enabling the organism to regain its normality. A list comprising the names of 121 diseases which the "Perfected Oxygenor King" is claimed to cure is given in the circular. Among these are epilepsy, heart disease, locomotor ataxia, scarlet fever, yellow fever, and pneumonia.

TESTIMONIALS—AS USUAL

We can furnish proof that its range of cures is from Headache to Paralysis, from Blood Poison to Change of Life, from Chickenpox to Varicose Veins, from Colic to Bright's Disease, from Malaria to Dyspepsia. In fact, practically the entire list of prevalent ailments is embraced in the record of cures.

In contrast to the above the following statements are also found in the circular:

One of the most noteworthy features of the Oxygenor treatment is that the patient cannot possibly be injured or acquire a "habit" by its use. It is not only simple, durable . . . and manageable even by a child, but innocent . . . It cannot injure or distress even the most delicate infant.

While the circular advertising the "Perfected Oxygenor King" is on the whole, a jumble of distorted facts, meaningless phrases and baseless assertions it still seemed worth while in view of the absurd claims made to examine the contents of one of the instruments.

WHAT IT CONTAINS

The material examined (taken from the "generator") was a dull, bluish-green, odorless powder. It was made up of irregular sized particles, ranging from coarse to fine. Qualitative tests demonstrated the presence of sulphur in the free state and of sand, both in considerable quantities. Small quantities of lead carbonate (white lead), free carbon (charcoal), a few particles of brass, and traces of iron were also present.

Quantitative examination indicated[3] that the composition of the material is essentially as follows:

	Per cent.		Per cent.
Sulphur	66.85	Moisture	0.12
Sand	29.82	Brass	0.19
Lead carbonate	1.64	Iron	trace
Charcoal	0.90		
Total			99.52

Figure 1

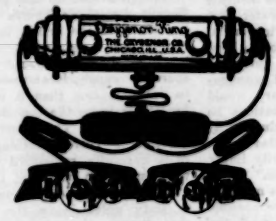

Figure 2

Figure 3

Fig. 1.—This depicts the piece of metal tubing "invented" by Hercules Sanche and named the "Oxydonor." The claim was made that "it causes the human organism to thirst for and absorb the oxygen of the air." It was advertised to "quickly and infallibly cure" a list of diseases ranging from "headache" to "hydrophobia" and from "twitchings" to "tetanus." This fake sold for from $10 to $35.

Fig. 2.—The "Oxygenor" is an elaboration of the "Oxydonor" fake. It, also, is supposed to "oxygenate" the simpletons who use it. Twenty-five dollars ($25.00) is asked for this piece of metal pipe filled with sand and sulphur.

Fig. 3.—The "Oxygenator" is the latest imitation of Sanche's original fake. It is just as worthless as the others and the claims made for it are even more viciously false. Twenty-five dollars ($25.00) and thirty-five dollars ($35.00) are asked for it.

The examination shows that the "rare and costly metals" consist of none more expensive than copper, lead or zinc, and that the other "chemical agents" (which comprise 97 per cent. of the whole) consist of sulphur and sand in the proportion of 2 to 1.

An examination of the cylinder from which the sulphur-sand mixture was taken reveals a curious situation. While all of the wires connected with the instrument are carefully insulated these wires and the screw posts are all attached to the surface of the brass cylinder without insulation from each other. The cylinder then, with its complex of three screw posts and "force-controlling cord," amounts to nothing more than an enlargement in a conductor. In effect it is as though insulated wires were soldered on opposite sides of a tin pail or, to use Dr. Morse's illustration, on opposite sides of a stove lid.

The examination of the "Perfected Oxygenor King" shows that it could not possibly generate the smallest quantity of oxygen or ozone and that it could not produce or induce any electric or magnetic phenomena whatever. Despite the emphatic statements of the exploiters (in the advertising circular) to the contrary the only possible therapeutic effects are those easily referable to the element of suggestion.

3. The details of the analysis will be published in the annual report of the Chemical Laboratory.

Correspondence

Typhoid Fever in Detroit

To the Editor:—The article in THE JOURNAL, October 8, on our water-supply, coming from the chief organ of the physicians of the United States, demands attention. From such an authority one would expect the most careful consideration and conclusions drawn, not from analogy or hypothesis but from scientific examinations of the water, its source and surroundings and the vital statistics affected by its supply. In other words, it is essential to make a careful and thorough "sanitary survey."

May I be permitted to doubt the thoroughness with which this has been accomplished by the commissioner of THE JOURNAL? The general tenor of his article is a condemnation of Detroit's water-supply and an intimation that we are in immediate danger of a typhoid epidemic. The belief in this menace to our health is not based on the health of the city, the results of a chemical and bacteriologic examination of the water, or positive evidence that there is danger of pollution.

The United States census bureau of statistics has just reported thirty-four large cities with a general death-rate of 15 per thousand, and well near the top comes Detroit with but 14. It is an accepted fact that an impure water-supply is one of the chief factors in determining mortality. Though it may not contain a specific disease germ, an impure water lowers vitality and renders consumers more liable to disease.

In the article referred to, the commissioner fails to mention any chemical examination made by him of the water, but states that the results of the local examinations "in general appear to be satisfactory." In other words, he indorses local analyses, which have invariably demonstrated the purity of our supply. It is fair to presume that his chemical examinations served to confirm our reports, or the contrary would assuredly have been proclaimed. Bacterial examinations he says "do not afford any marked evidence of contamination at the time the samples were collected. On the other hand, their generally negative character does not necessarily imply that the water is at all times and all conditions safe."

Here again he indorses the numerous examinations made by the local board of health and implies that it may be possible that at times when the examinations are not being made the supply may be contaminated. The bare possibility may be granted, but if a present contamination is not detected in a long series of examinations extending over a number of years, does it not seem worse than sensational to startle and alarm a large city with a hypothetical possibility?

As to danger of pollution in future: it is admitted that Conner's Creek furnishes nearly the only menace to the water-supply, and that the exit of this creek is opposite although removed nearly three-quarters of a mile (3,700 feet) from the intake pipe; a deep and moving stream (three miles an hour) separates the two points. It is clearly impossible for a sluggish creek to project its contents through a huge volume of quickly moving water to our source of supply. The extension of the city takes in Conner's Creek, and the projected sewerage will soon remove even this assumed danger.

To confirm his opinion of the danger of an epidemic somewhere in the future, the commissioner gives several tables of vital statistics among which is that of the average death-rates per thousand population by five-year periods since 1886 as follows:

1886-9	4.52	1900-4	1.74
1890-4	4.35	1905-9	2.05
1895-9	1.91		

Twenty-five years ago (five-year period) we had more than double the deaths we have at present. The same is true of the next five-year period twenty years ago. This tremendous decrease in mortality assuredly points to anything rather than a gradual increase of contamination of our water-supply, the result of "Detroit's increased population." Nor does it seem to confirm the commissioner's statement that "if present conditions are allowed to govern Detroit's water-supply a much more serious outbreak of typhoid is but a question of time."

Assuming that the deaths from typhoid in Detroit are due to water contamination, the decidedly lessened mortality would seem to indicate an improvement in watershed sanitation.

I agree with the commissioner that a thorough, intensive and exhaustive examination of the whole situation, similar to that carried out in Washington and Pittsburg, should be undertaken to settle once and for all this vital question and to allay public apprehension created by these frequent attacks on the purity of our water-supply.

JOHN E. CLARK, M.D., Detroit.

[COMMENT: Dr. Clark says he has offered the above reply to the Detroit newspapers. One of these, the *Free Press*, states that Dr. Clark "has written a letter to the editors of the magazine which will make interesting reading for them and for the medical fraternity of the country."

It ought not to be necessary to state that in publishing this study of the water-supply of Detroit and the typhoid situation THE JOURNAL did not intend "to startle and alarm a large city with a hypothetical possibility" in a way "worse than sensational;" but the investigation, as in the case of Milwaukee, was an incident in the thorough study which THE JOURNAL is making of typhoid conditions in the cities of the United States. Municipal water-supplies and sewage disposal present serious problems for the immediate future; and the prevalence of typhoid fever is a pretty good indication that conditions in any city are not what they should be.

With reference to the particular situation in the city of Detroit, Dr. Clark ignores the chief facts and misinterprets the tenor of the article in question. The facts are briefly these: One extensive epidemic of typhoid fever in Detroit has been definitely traced to the public water-supply; the source of supply is at present as much if not more exposed to contamination than it was when this epidemic occurred; for fifteen years the typhoid fever rate in Detroit has shown no diminution. These facts have not been and cannot be questioned. There is nothing novel or sensational about them. It is generally recognized among sanitarians that Detroit's water-supply is not what it should be. Hazen, for example ("Clean Water and How to Get It," p. 29), says: "Detroit is sixty miles below the outlet of Lake Huron, and in that distance there is opportunity for much pollution. This pollution comes both from the drainage of the considerable area reaching the river in this distance and from the discharge of sewage from the cities directly upon its banks. And this pollution by sewage is an important matter even with a dilution as great as that in the Detroit River." The statement that in some years Detroit has had a lower death-rate than some other cities is beside the point. If other American cities have a higher typhoid rate than they should, that is no reason why Detroit citizens should clamor for the same privilege. The *tu quoque* argument is nowhere more out of place than in sanitary matters. Would Dr. Clark maintain (1) that no sewage ever finds its way into the Detroit water-intake; (2) that there is at no time more typhoid in Detroit than would be expected in a city with a pure water-supply?

We would suggest to the Detroit newspapers, and to those officials who are supposed to represent the people as regards health matters, that it is better to know the facts and act on them, than ostrich-like, to refuse to see danger and to say there is none. See editorial comment, page 1477.—ED.]

A Restricted Materia Medica List

To the Editor:—The action of the National Confederation of State Medical Examining and Licensing Boards in advising the restriction of materia medica examinations to a comparatively small number of drugs is to be highly commended. It is certainly better to know one hundred drugs well than to know one thousand badly. You are of course right in your assumption that the list will hardly please everybody. I cannot truthfully say that it pleases me absolutely; for in my opinion it contains some drugs which in a restricted

list might as well be omitted, and it does not contain some drugs which are of sufficient importance to be contained even in a select list. But this is not the point of this letter. The point is a mild criticism of the classification of the drugs. Emanating from such a high body greater care should have been taken in classifying the drugs properly. Or perhaps it would have been better to give them simply in alphabetic order. For instance, I cannot see why aqua hydrogenii dioxidi, oleum santali, aloe and aloinum should be classed among local irritants (THE JOURNAL, Oct. 8, 1910, p. 1302). One is an antiseptic, another is a diuretic and antiblennorrhagic (demulcent in character) and the last two are catharties; to bunch them all together as local irritants is in my opinion rather unscientific. Nor is it right to class oleum morrhuæ and pepsinum among the protectives and emollients. I am not aware that carbon monoxid is a drug, official in any pharmacopeia, but still it is classified twice, as a hydrocarbon narcotic (hydrocarbon without any hydrogen!) and among "sundry." To classify potassium permanganate as a saline is not quite right, but to do so with saccharum lactis is rather ludicrous.

WILLIAM J. ROBINSON, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ARSENO-BENZOL—"606"—ARSEN-PHENOL-AMIN

To the Editor:—Where can I learn more about the Ehrlich-Hata remedy for syphilis? A. D. G.

ANSWER.—The above is a sample of the frequent inquiries that are received in this office. THE JOURNAL has endeavored to keep its readers informed on every phase of this subject, as soon as arsenphenol-amin seemed to be a practical addition to our therapy of syphilis, but, naturally these abstracts and editorials made no particular impression on many of our readers; now that the importance of the remedy is more apparent to them, however, they seek for additional information and write to us without looking back over the previous issues of THE JOURNAL. For their benefit, we give below the issues of THE JOURNAL in which the principal references have appeared. August 13, September 10 and October 8 and 22 are the most important issues.

THE JOURNAL has published the following original articles and editorials on this subject:

Nichols, H. J.: Preliminary Note on Action of Ehrlich's Substance "606" on *Spirochæta pertenuis* in Animals, THE JOURNAL, July 16, p. 216.

Murphy, J. B.: Arsenical Treatment of Syphilis, THE JOURNAL, September 24, p. 1113.

Nichols, H. J., and Pordyce, J. A.: Treatment of Syphilis with Ehrlich's "606," THE JOURNAL, October 1, p. 1171.

Corbus, B. C.: The Value of Ehrlich's New Discovery; A Preliminary Report from Personal Observation, THE JOURNAL, October 22, p. 1470.

Ehrlich's New Remedy for Syphilis, editorial, THE JOURNAL, August 13, p. 601.

Organic Arsenic Preparations—Ehrlich's "606," Editorial, THE JOURNAL, September 10, p. 949.

Ehrlich's Syphilis Remedy Not Yet on the Market, editorial, THE JOURNAL, September 10, p. 951.

"606"—Arseno-Phenol-Amin, editorial, THE JOURNAL, October 1, p. 1204.

The following articles have been abstracted in THE JOURNAL:

Wechselmann, W.: *Berl. klin. Wchnschr.*, July 4; abstracted in THE JOURNAL, August 13, p. 617. *New York Med. Jour.*, September 3; abstracted in THE JOURNAL, September 17, p. 1051.

Nelsser, A.: *Deutsch. med. Wchnschr.*, June 30; abstracted in Berlin Letter in THE JOURNAL, July 23, p. 326.

Schreiber, E., and Hoppe, J.: *Münch. med. Wchnschr.*, July 5; abstracted in THE JOURNAL, August 13, p. 617.

Loeb, H.: *Münch. med. Wchnschr.*, July 26; abstracted in THE JOURNAL, August 13, p. 617.

Treupel, G.: *Deutsch. med. Wchnschr.*, July 28; abstracted in THE JOURNAL, August 13, p. 617.

Fischer, P., and Hoppe, J.: *Münch. med. Wchnschr.*, July 19; abstracted in THE JOURNAL, August 13, p. 617.

Ehrlich, P.: *Wien. klin. Wchnschr.*, August 4; abstracted in THE JOURNAL, September 10, p. 976. *Münch. med. Wchnschr.*, August 30; abstracted in THE JOURNAL, October 8, p. 1331.

Bohac, K., and Sobotka, P.: *Wien. klin. Wchnschr.*, July 28; abstracted in THE JOURNAL, September 3, p. 898. *Wien. klin. Wchnschr.*, August 4; abstracted in THE JOURNAL, September 10, p. 976. *Wien. klin. Wchnschr.*, August 25; abstracted in THE JOURNAL, October 1, p. 1239.

Herxheimer, K., and Schonnefeld, B.: *Medizinische Klinik*, September 4; abstracted in THE JOURNAL, October 8, p. 1331.

Spiethoff, B.: *Münch. med. Wchnschr.*, August 30; abstracted in THE JOURNAL, October 8, p. 1331.

Duhot, R.: Ibid.

Martin, A. P.: *Siglo med.*, September 10; abstracted in THE JOURNAL, October 1, p. 1209.

Braendle and Clingstein: *Med. Klin.*, August 21; abstracted in THE JOURNAL, September 24, p. 1153.

Iversen, J.: *Münch. med. Wchnschr.*, August 16; abstracted in THE JOURNAL, September 24, p. 1154.

Taege, K.: Ibid.

McDonagh, J. E. R.: *Lancet*, September 3; abstracted in THE JOURNAL, October 1, p. 1234.

Hoffmann, E.: *Med. Klin.*, August 14; abstracted in THE JOURNAL, September 17, p. 1062.

Pick, W.: *Wien. klin. Wchnschr.*, August 18; abstracted in THE JOURNAL, September 24, p. 1155.

Heubner, W.: *Therap. Monats.*, August; abstracted in THE JOURNAL, September 24, p. 1155.

Isaac, H.: *Berl. klin. Wchnschr.*, August 15; abstracted in THE JOURNAL, October 1, p. 1236.

Michaelis, L.: Ibid.

Junkermann, K.: *Med. Klin.*, August 28; abstracted in THE JOURNAL, October 1, p. 1237.

Fraenkel, C., and Grouven, C.: *Münch. med. Wchnschr.*, August 23; abstracted in THE JOURNAL, October 1, p. 1238.

Kromayer, E.: *Berl. klin. Wchnschr.*, August 22; abstracted in THE JOURNAL, October 8, p. 1329.

In addition THE JOURNAL's foreign correspondents have reported from Paris, Berlin, Budapest and Vienna the results obtained with this remedy (THE JOURNAL, August 13, pp. 609 and 610; August 27, p. 791; October 22, p. 1483, etc.).

A letter from Dr. B. C. Corbus in THE JOURNAL, October 8, describes a visit to Ehrlich and his method of administering this remedy, and his article in this issue (October 22) gives a careful description of the Lesser technic, which Corbus thinks is the best.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Oct. 15, 1910.

Bowman, M. H., M.R.C., granted leave of absence for 2 months and 24 days, to take effect about October 15.

Slater, Ernest P., M.R.C., par. 27, special orders No. 224, Sept. 24, 1910, W. D., announcing his honorable discharge from the service of the United States on Oct. 13, 1910, is suspended for the present.

Voorhies, Hugh G., dental surgeon, granted leave of absence for 1 month, to take effect about October 24.

Hedlebower, Roy C., lt., will proceed to Fort Totten, N. Y., about October 19, for temporary duty, during the absence of Major Charles Willcox.

Strong, Francis X.; Carter, Henry P., and Gantt, Robert H., M.R.C., ordered to active duty in the service of the United States, and to the Army Medical School for a course of instruction.

Ragan, Charles A., captain, ordered to the Walter Reed General Hospital, District of Columbia, for observation and treatment.

Williamson, L. P., lt., ordered to Fort D. A. Russell, Wyo., for duty.

Roberts, William M., major, leave of absence granted in S. O. 140, June 16, 1910, extended one month.

Straub, Paul F., major, granted leave of absence for 1 month and 15 days, about November 1.

Eastman, William R., captain, granted leave of absence to include Nov. 5, 1910, on account of sickness.

Wiggin, D. C., M.R.C., resignation accepted, to take effect Nov. 1, 1910.

Moncrief, William H., captain, granted leave of absence for 1 month, with permission to visit China and Japan.

Medical Corps, U. S. Navy

Changes for the week ended Oct. 15, 1910.

Wise, J. C., medical director, transferred to the retired list from Oct. 7, 1910.

May, H. A., passed asst.-surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the bureau of medicine and surgery, Navy Department, temporarily.

Morris, L., surgeon, detached from the *Georgia* and directed to await orders.

Howard, J. V.; Omelvena, J. G.; Halsey, W. H.; Eaton, W. E.; Jacoby, A. L.; Pratt, L. L. and Halton, E. P., asst-surgeons, commissioned asst.-surgeons from Oct. 1, 1910.

Stuart, D. D. V., Jr., asst.-surgeon, commissioned asst-surgeon from Oct. 5, 1910.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

UNQUALIFIED DOCTORS VS. UNQUALIFIED LAWYERS

The newspapers are showing a marked tendency toward a broader view of the relations of the medical profession to the public. This tendency is increasing and has been frequently commented on. In a recent number of the Denver *Times*, the editorial writer gives a sudden and somewhat unexpected turn to the efforts which are evidently being made in Denver to enlist support for the National League of Medical Freedom. No better method could be devised for exposing the specious nature of the claims made by this organization.

Why, as the *Times* pertinently inquires, do we not have a National League for Legal Freedom? One might also ask why do we not have a national league to free us from the persecutions of licensed engineers and pilots, or from any of the other safeguards and protections which civilization has thrown around the life and health of the individual? If the citizen is to be allowed to spread typhoid fever, diphtheria or tuberculosis among his acquaintances and associates, if any man who claims to be a prophet of a new sect or cult is to be allowed to treat the sick, why should not any man who feels called on to do so, be allowed to practice law before the courts, to run an engine, or to steer a steamboat? If we are to have "medical freedom," why should we not have freedom of every other kind such as is enjoyed by the savage who recognizes no restraints either for his own good or that of others? With these considerations in mind, the extracts from the *Times* editorial are especially interesting:

"Why should not the Hon. Charles Spalding Thomas and his friends of the 'Medical Freedom League' expand their efforts in behalf of professional incompetency by including in their latest movement the emancipation of the people from the impositions of qualified, legal practitioners. Is not this city, is not every city crowded already with confident citizens who, though they know not Coke, nor Blackstone, nor Chitty, are yet ready to 'give an opinion' on the abstrusest of legal problems, and who will give you that opinion free and without the asking? Why should it not be the inalienable right of every citizen to 'practice law' without the tedious botheration of first studying its principles? . . . Why shouldn't there be osteopathic lawyers; and absent-treatment lawyers; and eclectic lawyers; and fasting-cure lawyers; and lawyers who are not lawyers? This lawyers' trust opens a new and enticing field for the energies of patriotism, the enthusiasm of folly and the sweets of advertisement; and we confess astonishment that Mr. Thomas—who surely knows more of law than he knows of medicine—has not seized the occasion sooner. To be an honorary vice-president of a 'League of Medical Freedom' is an empty honor because there are so many of them already; to be president of the 'League of Legal Liberty' would be a distinction that a man could hold alone and uncoveted."

After paying a truly beautiful tribute to the old-fashioned family doctor, the editorial continues:

"We are discussing this question of physician and patient at some length to-day because it is essentially a 'domestic' theme. It concerns in an intimate way our common lives and well-being. If the law permits a man to call himself a doctor of medicine who is not a doctor of medicine—learned in medicine—the law is permitting a fraud, and a hazardous fraud, on the public. If the law permits a man to practice surgery who has no sound knowledge of that science, the law is abasing itself before a counterfeit. We confess to a secret admiration for certain kinds of 'patent medicines.' We know of no reading that equals in its imaginative sweep the 'literature' which accompanies those artistically wrapped bottles of 'reliable, household remedies.' But the harmless 'patent medicine' is a solacing, if useless, thing that works no harm if it produces no benefits; while the living man who professes a skill that he has not is responsible for innumerable maimed bodies and poisoned lives. We feel that we are conservative in estimating that 80 per cent. of the people are attended by physicians of the 'regular' allopathic and homeopathic schools; and yet many newspapers are careful to keep silence on the subject because of a fear of offending the adherents of some cult or other who are supposed to regard even honest criticism as an offense. And we believe that fear to be ill-founded. . . .

"The men who make 'proprietary' medicines and sell them, not as 'patent' but authentic; and the unqualified 'quacks' who seek to practice under a title to which they have no just and qualified claim, are humbugs of an inimical kind with whom we can negotiate no truce. And we may as well make our attitude on that matter quite plain at this inception of the Medical Freedom 'League.' Because that 'league' is a contradiction in terms and it ought to have something very heavy and very hard hurled at it with great frequency."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month—Second Weekly Meeting

SURGERY OF THE KIDNEY

INJURIES OF THE KIDNEY

PATHOLOGY: 1. Penetrating, gunshot and stab wounds. Injury to kidney, ureter, blood-vessels, peritoneum. 2. Subparietal injury, rupture of kidney. Extent, structures injured, hemorrhage, extravasation of urine.

SYMPTOMS: Local injury. Hematuria. Prostration or shock, sweating, vomiting, pain.

TREATMENT: 1. Gunshot wounds. 2. Incised wounds. 3. Subparietal injury.

MOVABLE KIDNEY

ETIOLOGY: Pregnancy, lacing, loss of flesh, traumatism, association with enteroptosis, configuration of renal fossa.

SYMPTOMS: Digestive and abdominal symptoms, neurasthenia, Dietl's crisis. Physical examination.

TREATMENT: Palliative. Operative, indications, technic of nephrorrhaphy.

HYDRONEPHROSIS

VARIETIES: 1. Congenital. 2. Acquired, from traumatism, ureteritis, stricture, calculus, pyelitis, floating kidney, malignancy, prostatic enlargement.

PATHOLOGY.

DIAGNOSIS: Differentiate from cystic kidney, enlarged gallbladder, tumor of liver or ovary.

TREATMENT: 1. Removal of obstruction. 2. Treatment of kidney.

Society Proceedings

COMING MEETINGS

Am. Assn. for Study and Prev. Infant Mort., Baltimore, Nov. 9-11.
Hawaiian Territorial Med. Assn., Honolulu, November 26-28.
Ohio Valley Med. Assn., Evansville, Ind., Nov. 9-10.
Southern Medical Assn., Nashville, November 8-10.
Virginia, Medical Society of, Norfolk, October 25-28.

AMERICAN ROENTGEN-RAY SOCIETY

Eleventh Annual Meeting, held at Detroit, Sept. 29-Oct. 1, 1910

The President, Dr. GEORGE E. PFAHLER, Philadelphia, in the Chair

The officers elected were given in THE JOURNAL, Oct. 15, 1910, p. 1390. Richmond, Va., was selected as the place for holding the next annual meeting, the time to be decided later.

Tuberculosis of the Lungs as Seen and Heard

DR. HENRY HULST, Grand Rapids, Mich.: The work I wish to report on was done in the Grand Rapids Tuberculosis Sanitarium for the purpose of determining the value of roentgenographic diagnosis in tuberculosis of the lung. The results were secured by physical examination, skiagrams and

autopsy, each observer working independently of the other, making an individual diagnosis, and then comparing his findings with the other two. Cavities, especially deep ones, are generally missed by physical diagnosis, but they are always shown on the plates, some of them even showing structural lung detail. Their depth is best determined stereographically. They always appear as dark spots, and in most cases are corroborated at necropsy. The skiagram never fails to show the disease in the presence of clinical evidence or physical signs; in fact, it shows better the extent of the disease than do the other methods. A diagnosis should not be made on the strength of physical diagnosis alone, nor on the tuberculin test, nor on the skiagram, although the latter is the best single method of diagnosis. In some plates, the healing process is graphically shown. The great advantage of the roentgenographic method is that it furnishes a correct, though incomplete, graphic reproduction of the microscopic anatomicopathologic changes in the lung. These pictures must be read, however, in the terms of post-mortem findings, and not of auscultation and percussion.

DISCUSSION

DR. K. DUNHAM, Cincinnati: I wish to emphasize the value of stereoscopic plates in making a diagnosis of tuberculosis of the lung. They are an absolute necessity. This work is showing us that we must look, not to the apices of the lungs, but to the hilus for the first evidence of tuberculosis. The difference in density from the normal is very apparent and is easily recognized by the expert.

DR. L. G. COLE, New York: In New York, I asked the board to have three independent physical examinations made of these patients before I made a skiagram. When those three men agreed on the physical signs, the process in the lungs was so extensive that it could not be considered incipient. The most interesting part of that was that it occurred in about 75 per cent. of the early cases, whereas in the other 25 per cent. these 3 men located the disease in different parts of the lung, but the skiagrams would definitely locate the disease—and it was not always the same man whose physical findings were corroborated by the skiagram.

Primary Lymphangiosarcoma of the Lungs

DR. ALFRED L. GRAY, Richmond, VA.: The appearance of the skiagram in this case was typical of an extensive miliary tuberculosis of both lungs. The patient had been bothered every summer and winter for the past six years with what he considered to be a severe cold, which would finally settle on his chest. His last attack was of three months' duration. There was loss of appetite, lassitude, loss in weight, and a very annoying and hacking cough, occurring in paroxysms and accompanied by intense pain in the chest. Expectoration was scanty and frothy. The heart was normal. There was slight impairment of resonance in the left supraclavicular region, with numerous dry rales in the left interscapular and subscapular regions. Temperature and pulse were normal. There were one or two enlarged glands in the right supraclavicular region. Histologic examination of one of these gave a picture of a typical lymphangiosarcoma. The patient died, but a necropsy was not permitted.

DISCUSSION

DR. H. K. PANCOAST, Philadelphia: I had a similar case last winter. The first radiograph I made showed the same picture as Dr. Gray saw in his plate, and had I not known something of the clinical history of the patient and the suspected diagnosis, I would not have known that it was not a case of pulmonary tuberculosis. A week or two later, I made a second plate, and found an effusion into the pleural cavity on the side most affected. It caused considerable confusion in the mind of the clinician, who could not understand the reason for these shadows when the case was undoubtedly one of growth in the lung. It is difficult to make a diagnosis between a growth of this kind and pulmonary tuberculosis, and it emphasizes the fact that an effusion in the pleural cavity may occur in these cases.

DR. K. DUNHAM, Cincinnati: In a case of carcinoma of the lung, the stereoscope saved us from making a diagnosis of tuberculosis. The question arises in Dr. Gray's case, whether it is not really a case of tuberculosis in the lung and lymphosarcoma in the gland removed from the neck. Unfortunately, a necropsy was not permitted; it might have cleared up the diagnosis.

DR. F. H. BAETJER, Baltimore: About six months ago, I saw a patient who apparently had an esophageal stricture. Bismuth was given and the skiagram showed that the esophagus was drawn over to the right side, and that both lungs were studded with tuberculous nodules, some being of good size. I made a diagnosis of tuberculosis, and gave it as my opinion that the stricture was caused by it. An operation was done and a carcinoma of the esophagus was found. The patient died, and at the necropsy we found the carcinoma, and on the edge of it a lot of tuberculous tissue. The lungs were studded with tuberculosis and carcinoma. The skiagram did not show the difference between the two.

DR. HENRY HULST, Grand Rapids, Mich.: I think that it is a mistake to base an absolute diagnosis of miliary tuberculosis or lymphosarcoma on plates alone, even when viewed stereoscopically. We must not base a diagnosis on insufficient data, because that will discredit our work.

DR. FEDOR HAENISCH, Hamburg, Germany: If no necropsy was made in this case, we should not be so very sure that the plate shows a lymphosarcoma of the lung. I think it is a case of miliary tuberculosis with a thickened pleura.

DR. L. G. COLE, New York: One point against the tuberculous nature of this case is the even distribution of the spots. It is rare to see tuberculosis affecting the entire chest in that way. There are always areas in which the disease is more extensive than elsewhere. The picture might correspond with a diffuse acute miliary tuberculosis. Of course, the clinical symptoms did not correspond with this.

DR. G. C. JOHNSTON, Pittsburg, Pa.: I have skiagraphed about 40 cases of carcinoma of the lung, and 12 or 13 of these were referred to me merely because of some slight affection, a little paralysis, of the vocal cord. The majority of these patients gave a history of previous operation for carcinoma, one patient had a breast amputated 20 years previously. There was no recurrence in the scar, but examination showed carcinoma or tuberculosis involving both lungs. I could not differentiate which was present from an examination of the plate alone. I inclined to a diagnosis of carcinoma, and in every case, time proved the correctness of that diagnosis.

DR. W. F. MANGES, Philadelphia: A more or less distinct outline of the growth is characteristic of sarcoma. I saw that shown distinctly in a case I had last winter. I think Dr. Gray's case was one of tuberculosis.

(To be continued)

MICHIGAN STATE MEDICAL SOCIETY

Forty-Fifth Annual Meeting, held at Bay City, Sept. 28-29, 1910

The President, Dr. J. H. CARSTENS, Detroit, in the Chair

The officers elected were noted in THE JOURNAL, October 15, page 1388.

President's Address: Medical Organization, Education, and Legislation

DR. J. H. CARSTENS, Detroit: Medical societies enable practitioners to keep up to date. Physicians should study the great question of eugenics, which is especially a medical question, and also place themselves in the front ranks for social purity. Medical laws are made for the benefit of the public, and the State of Michigan should appropriate money for the medical examining board, and not let the latter depend on the fees for medical certificates.

Expert medical testimony has been a blot on the medical profession. Laws should be enacted which would require every county medical society to select from its own ranks, say three men of every branch of medicine, who would be

considered experts in those branches. Large medical societies could select ten or twenty in each branch. If a case occurs in the courts for expert medical testimony, the judge should select the three men so designated, who are to examine the patients at their leisure, discuss the case among themselves, arrive at some conclusion, and bring in their report and testify to the findings. Even as the law now stands this would not prevent the other side from having other expert testimony, but few of the latter experts would be found who would testify contrary to the experts designated. By having such experts we would get more justice and shorter law suits, with less expense to the county. In other professions like pharmacy, dentistry, architecture and engineering the same method might be carried out, and so greater justice would be done in all law suits, and the work of the professional expert would be at an end.

Interpretation of Gross Findings in the Urine

DR. WILLIAM E. KEANE, Detroit: The gross observation of the urine will prove of most value in the management of gonorrheal patients. Vigilance here will sometimes anticipate a beginning epididymitis by noting the peculiar cloud of exudate that appears in the second tube, before any other objective or subjective symptom appears. The purulent urine of acute gonorrheal inflammation is, as a rule, free from shreds, but as the inflammation subsides and becomes localized, little scabs are formed that wash down with the streams of urine. As the pus decreases and the shreds appear, improvement will be daily more marked. Each and every shred has its story to tell. The thick pieces of irregular size are generally indicative of stricture or chronic inflammation. The thread-like strings that quickly settle, weighed down with pus, are from the anterior urethra. The so-called tadpole shred has a globular head, with a long cotton-like tail, and arises from a follicle of the deep urethra. The fleecy film which suspends near the top originates in the prostatic sinus and may contain prostatic cells, bacteria, spermatozoa and mucus. The heavier mucus is seen only in the first tube with an absolutely clear second tube, indicating trouble in the anterior urethral glands. Epithelium appears floating in the urine as a dark or light-colored dust, depending on the amount present. Besides the recognition of the individual shreds, one soon learns to note other changes in its character. Whether the urine is sparkling or flat, whether it is of high or low specific gravity will be determined at a glance. Bacteria, when present, will be found in both tubes. The gonococcus produces a dirty color, with an odor that offers confirmatory evidence. A patient suffering from chyluria will pass a urine that is distinctively indicative of his trouble. The milky-looking mixture is seldom, if ever, seen in any other urinary condition.

Pellagra

DR. E. L. EGGLESTON, Battle Creek, read a paper in which he presented a report of two cases of this disease with the diagnosis and treatment. He also reported the necropsy findings in one case, together with the etiology and pathology of the disease.

DISCUSSION

DR. JOHANN FLINTERMAN, Detroit: Did pain running along the course of the nerve trunks appear, and was it manifested by skin and internal symptoms? Were there other symptoms? Cases have been described in which there was a manifestation of some skin affection, combined with severe diarrhea and perspiration.

DR. CHURCH, Adrian: Did any of the patients recover?

DR. FRANK SMITHIES, Ann Arbor: Was the Wassermann reaction used in any of these cases, or was a blood examination made?

DR. E. L. EGGLESTON, Battle Creek: In one case which ran a very short course and terminated fatally, the patient complained of no pain whatever, and there was no rise of temperature any time; but there was a subnormal temperature during the course of the disease. The clinical manifestations are different in different cases. Frequently, when the nervous system seems to be particularly affected, there may be a great deal of pain. In the case reported as originating in Michigan, the patient had a great deal of pain in the back and head and neck, and complained considerably of headaches. Two of the patients died. Of the other three patients, one seems to be in very good condition, although there have been two recurrences of the disease. The other two are certainly getting worse and will not live very long. The mortality at present is considered to be about 35 per cent. The Wassermann reaction was not tried in any of these cases. The blood was examined frequently, a blood count made, and there was a moderate degree of anemia in each of the cases. I want to emphasize the point that if a patient, from the south or not, complains each spring of a feeling of great debility, loss of appetite, stomach disturbance and diarrhea, he should be watched very carefully. Many such cases appear in the north, many of them in Illinois; they are not limited to the south, and by keeping these points in mind one will not miss the diagnosis very often.

(To be continued)

KENTUCKY STATE MEDICAL ASSOCIATION

Fifty-fifth Annual Meeting, held at Lexington, Sept. 27-29, 1910

(Concluded from page 1492)

Diagnosis and Medical Treatment of Cirrhosis of the Liver

DR. G. W. PAYNE, Bardwell: Atrophic cirrhosis of the liver is incurable. So far as we know, there is no drug that can remove the cicatricial connective tissue; on the other hand, we know that these conditions can exist for years when compensatory circulation exists. The patient should abstain entirely from alcohol and live on a milk diet as nearly as possible. The diet should be nutritious, but not too rich. The gastric intestinal catarrh should be reduced, if possible, and the patient should lead a quiet outdoor life. Skin must be kept active and bowels open, and the patient should pass plenty of urine. For the ascites at its onset, or to prevent reaccumulation after tapping, such cathartics as magnesium sulphate, compound jalap powder or minute doses of calomel may be used. As a diuretic, I give bitartrate of potassium, combination of calomel, digitalis and squills, or infusion of digitalis. Lavage is useful in most cases, bitter tonics and acids may increase the appetite. If hemorrhage takes place from stomach or intestine, ice to the abdomen, morphin hypodermically and rest are indicated. If profuse diarrhea is present bismuth subnitrate, tincture of krameria or tincture of catechu may be used. In the syphilitic cases, or when syphilis is suspected, potassium iodid and mercury should be given in large doses.

Diagnosis and Treatment of Cholecystitis

DR. IRVIN ABELL, Louisville: Acute suppurative and gangrenous involvements of the gall-bladder are, as a rule, easily recognized; the local pain, tenderness and swelling, due either to distention of the gall-bladder or to surrounding adhesions, point unmistakably to the cause of fever and gastric distress. In such instances, an attempt at medical treatment is but to invite further disaster. Resort should be had to immediate drainage. In cases of the fulminating type, the diagnosis is not always easy; the sharp onset, violent pain, which is not always localized, vomiting, distention of the abdomen, rapid pulse, are seen with other lesions—notably of the appendix, or a beginning of peritonitis, from rupture of some of the hollow viscera. In such cases, the history is of value in making a diagnosis, particularly pain or discomfort in the gall-bladder area, immediately preceding the onset of symptoms. Such cases usually pursue a rapid course, leading to abscess formation, gangrene or rupture, and only prompt recognition and early operation give promise of saving life and restoring the diseased viscus to such a condition as to permit it to carry out its physiologic function. The indications for surgical treatment embody two principles: (1) removal of obstruction;

(2) institution of drainage. In some cases no abdominal operation is easier; in advanced and complicated cases, no abdominal operation is more difficult. The removal of obstruction may mean the removal of stones from the gall-bladder, cystic, hepatic, or common duct. It may mean that the operator must remove, or mechanically overcome, the effects of stricture of either of the ducts; in the case of the cystic duct, this may necessitate the removal of the gall-bladder; in the case of stricture of the common duct, it may mean a plastic operation on the duct or its junction with the intestine. Obstruction is frequently caused by adhesion and inflammatory deposit; thorough separation may be easy or may present difficulties which tax the most skillful. Drainage may be required in the gall-bladder, or in the common or hepatic ducts, and has to be made by means of rubber tubing, which is stitched into the ducts or bladder. The drainage should be continued long enough to overcome the infection. No operative procedure is complete unless a thorough examination of all the bile passages, demonstrating their potency, is made. With the elimination of obstruction and the institution of free drainage, we may safely promise a patient not only relief but permanent cure with a minimum exposure to danger.

State Care of the Insane

DR. CURRAN POPE, Louisville: Real investigation into the condition of those who enter state hospitals for the insane is either never made, or is at best superficial and never scientific. The time has come when the importance of treating the insane should receive the same intelligent consideration and care as is now given to the treatment of tuberculosis. The wave of public sentiment that has lifted tuberculosis to its present position should be duplicated with the mentally afflicted, and we should no longer hear of an unfortunate being classed as the "accused," needing prosecution on the one hand and defense on the other, both of which, in truth, are purely nominal and largely automatic. Our legislatures must awaken to the dangers of such a system and be prepared to accept all that modern psychologic work has done in its practical application to the mentally sick.

We should have no "asylums" for the insane; we need modern hospitals. The aim should be not to herd mentally unsound people in corridors flanked by rooms, to give them three meals a day, a few medicines, and control by attendants, but to use every manner of means known to medical science to cure them. There is a prevalent and wide-spread belief that, in the vast majority of instances, insanity is incurable; this is not true. The majority of insane patients do not recover because they do not receive proper diagnosis, and practically have no treatment. As a result, insane hospitals are truly and properly named "asylums," in which are kept hundreds of chronic insane, who live and die an "asylum life," simply because they have been subjected to custodial care alone. With a modern psychopathic state hospital, the patient could be quietly and without publicity sent for treatment on the recommendation of a commission of psychiatrists, whose report should be subject to supervision in chambers by the county judge. For the future care of Kentucky's mentally unsound, I would suggest a central hospital, modern in its equipment, located near a large city, with every facility for diagnosis investigation and treatment. Through this hospital, every patient would first have to pass, and when it was found that the unfortunate sufferer was condemned to permanent loss of mind, he could be removed to one of the present hospitals for custodial care. Such a hospital would be incomplete without a psychologic laboratory, equipped with modern instruments of precision, in the hands of a trained expert, with a corps of assistants, who could test and study and relieve many cases by well directed psychologic work alone. Modern psychiatry has advanced with rapid strides toward the more thorough and complete understanding of the intellectual mechanism of the insane, and any modern, up-to-date hospital that does not possess a full equipment of psychologic apparatus, with experts in charge, who devote their time and attention solely to the investigation and study of the ailments and afflictions of its patients, falls far short of the modern conception of hospital work.

Chronic Nephritis

DR. S. L. BEARD, Shelbyville: There are many causes for chronic nephritis—alcoholism, long exposure to cold and dampness. The gonococcus plays an important part in the cause of the disease, the germ may have been lurking in the joints or the prostate, and after all other symptoms of gonorrhea have disappeared, even years after the disease has been apparently cured, may give rise to acute or chronic inflammation of the kidneys. Other causes are acute infectious diseases, such as scarlet fever, which often produces the acute form, and maybe the chronic form of the disease. The disease is very slow to develop. Possibly the first symptoms to be noticed will be a slight edema of the eyelid or of the legs, then a listless feeling, the patient being restless at night and unable to sleep, with loss of appetite. Edema is always a prominent symptom, and will eventually give the patient a great deal of discomfort. As the disease develops, the legs may swell to an enormous size, with rupture of the skin and oozing of serum. The amount of urine in a case of chronic nephritis is very much diminished. Frequently the quantity will be diminished 40 per cent., some days a larger quantity may be voided. In the later stages of the disease, the volume of urine increases to some extent; the specific gravity is often below normal, it may possibly be normal or above. Little can be done in treating these patients, for we rarely see the case until it is well developed. We may advise the chronic alcoholic to stop drinking. The treatment of the chronic form of the disease is about the same as that of the acute. The first essential is to insist on absolute rest in bed for a period of time at least; of course, the patient should not be kept in bed indefinitely; a little sunshine and very moderate exercise will be beneficial, but for a time at least we should insist on rest and quiet.

Intracranial Complications of Otitis Media

DR. G. C. HALL, Louisville: The study of the intracranial complications of otitis media has been extensive enough, and over a sufficient period of time, to permit us to draw certain conclusions regarding the cause and effects of suppuration within the temporal bone, and for the most part the method to be applied to stop it and guard against its extension. As in other regions of the body, prophylaxis is of chief importance. It is much easier to prevent these conditions than to cure them when once developed. "Cure every case of otitis media," should be the watchword of the profession. In this way alone we would eliminate at least 90 per cent. of the complications of temporal bone suppuration, for, as a general proposition, it may be stated that primary acute otitis media with mastoiditis offers but few instances of intracranial involvement, and in them the infection is overwhelming. In dealing with this subject we practically presuppose the existence of mastoiditis, and in whatever light we view it the mastoid portion of the temporal bone becomes the object of our first concern. From a pathologic standpoint, the route of infection is nearly always through the mastoid cells, whether it be sinus thrombosis, brain abscess or meningitis. The symptoms are those primarily of mastoiditis with the symptoms of the complication added, and the treatment in all cases is directed to the thorough eradication of all diseased bone in the mastoid, as a preliminary to attacking the lesions of the deeper structures. In cases of suspected intracranial involvement, the organisms present in the discharge have an important bearing on the gravity of the lesion. It has been shown that the streptococcus is responsible in over 50 per cent. of these severe infections. In cases of sinus thrombosis, it can often be obtained from the general circulation. Prophylaxis is most important in dealing with these conditions. It is worth all the remedial measures we possess, and the truest and surest prophylaxis is obtained by putting every running ear under careful and intelligent treatment, and the correction of those diseases of the nose and throat that render the ear so liable to infection.

Acute Nephritis

DR. W. R. THOMPSON, Mount Sterling: All three forms of the disease are included under this heading, as it is impossible to differentiate the anatomic varieties from a clinical standpoint. Nearly every known disease has at some time been

shown to be accompanied or followed by acute nephritis. Acute infectious diseases are the most prolific causes, and scarlet fever heads the list; the specific organism of the disease, or its toxin, is responsible for the lesion of the kidney. The severity of the scarlatina or other infection bears no relation whatever to the occurrence of nephritis. Those suffering from the most malignant forms of the disease may entirely escape, while a patient with the mildest attack, and one which has perhaps been entirely overlooked, may have a most severe lesion of the kidney. It is important to bear in mind that a comparatively insignificant angina, mild rheumatism, or a slight attack of influenza, may be the forerunner of acute nephritis. The causative influence of cold in acute nephritis has been largely overestimated. In a majority of the cases, if the history is carefully and thoroughly investigated, the underlying cause will be discovered, and the exposure to cold will be found to be merely incidental.

Fracture of the Base of the Skull

DR. D. C. DONAN, JR., Horse Cave: Surgery of the skull is undergoing an evolution similar to stomach surgery in recent years. A source of error formerly was mistaken diagnosis. Fracture by *contre-coup* is a rare thing, according to Treves. The theory of Arran, as Archibald observes, merely states the fact. Rawlings' idea of a splitting force will explain some cases. Most cases can be explained by the law of von Wahl, namely, a fracture by bursting is due to bilateral compression, and the fissure runs parallel with the violence. The factors are velocity and momentum of the wounding object, as well as the shape or area of contact. The principal lesion is nearly always situated in the sella turcica, the petrous portion of the temporal bone, the greater wing of the sphenoid and the orbital plates. In nearly all cases, we are dealing with a compound fracture, and the high mortality is partly due to infection. Most cases with non-reacting pupils are fatal. Unconsciousness is not a reliable index of the severity. Under expectant treatment may be mentioned rest, restricted diet, purgation and the application of the ice coil. Hexamethylenamin has been recommended as a preventive of infection. Lumbar puncture has its advocates in selected cases. Decompression is a new addition to the list of operations for the relief of compression. Severe injuries, such as bursting fractures, with extensive laceration of the brain, are nearly always fatal, and these should be left to the inclination of the surgeon. Patients with immediate symptoms of compression and no laceration should be operated on. Cases in which there are late symptoms of compression and beginning optic neuritis, nearly always demand operation. In simple cases, in which there is no laceration and no compression, expectant treatment may be resorted to. In punctured fractures, we should explore all doubtful cases, and then follow the indications.

The Diagnosis and Treatment of Cancer of the Gastro-Intestinal Tract

DR. J. H. BLACKBURN, Bowling Green: The cure of cancer in the gastro-intestinal tract depends entirely on surgical treatment, hence it became necessary and imperative that the diagnosis should be made early, if we are to give more than temporary relief. The difficulty of the early clinical recognition of cancer in any portion of the gastro-intestinal tract is generally conceded, since a relatively large number of the patients do not present symptoms until late in the disease, often only after the involvement of adjacent structures. With the marked advances in the surgical treatment of the disorders of digestion during the last decade the history of cancer of the stomach has been entirely re-written. The classical symptoms of this condition, as found in all text-books on practice of medicine are anorexia, pain, vomiting, hemorrhage, humor and cachexia, the subjective symptoms varying somewhat with the location of the growth in the stomach. From the standpoint of the surgeon, these are late symptoms, for, if we wait for their development, the percentage of cures from operation will be very small. The surgical treatment may be divided into palliative and radical. The experience of both surgeons and physicians in the early diagnosis of gastric cancer is that the only way in which a positive diagnosis may be made is in the inspection of the parts when the abdomen is opened; therefore, exploratory laparotomy may be classed as one of the surgical procedures in the treatment of this condition. After passing the ileocecal junction cancer becomes a rather frequent lesion, increasing in frequency from the cecum through the colon and sigmoid to the rectum. In a large percentage of the cases of cancer of the large intestine the lesion is primary. It may be completely eradicated, and there are several factors which make the surgical treatment when instituted early a curative one, the most important of these being the slow rate of growth, the limited lymphatic drainage, the tendency to local extension rather than by metastasis. However, if we wait for the development of an acute or chronic obstruction, or for the presence of a distinctly palpable tumor, both of which may be called ancient symptoms, the time for complete removal of all the tumor and involved tissues may have passed.

Neurasthenia

DR. W. F. BOGGESS, Louisville: In every case of neurasthenia, ocular reflexes should be looked into and relieved by practical fitting glasses. For various mental conditions, fear, etc., exercise is the best remedy that can be used, and when the patient is able to do so he should do the things he fears most.

To sum up the treatment of neurasthenia:

1. Obtain control of your patient in every way possible, remembering that the attitude of the physician has much to do with the cure.
2. Find the cause, whatever it is, in the patient's habits, method and mode of living, past and present life; ascertain what physical defect may be present and remove it.
3. Determine whether the patient does or does not need the rest treatment, or intelligent supervision of exercise, work, rest and sleep.
4. Employ electricity, hydrotherapy, massage, psychotherapy, etc.
5. Include under general medicinal treatment the use of nux vomica, arsenic and the glycerophosphates, intelligently and physiologically administered.
6. Treat the various symptoms as they arise intelligently, always remembering that by paying too much attention to any one symptom you accentuate the trouble and thereby do your patient injury.

Cancer of the Uterus

DR. W. H. WATHEN, Louisville: Cancer arising in the cylindrical epithelium of the cervical canal is of the adenocarcinoma variety, and rapidly extends to adjacent structures, especially the parametrium and the bladder wall, quickly involving the lymph glands, and is often followed by metastasis in other organs. Hence, it is less amenable to treatment than cancer of the infravaginal cervix. Cancer arising from the endometrium, while it is from cylindrical epithelium and usually of the adenocarcinoma type, does not invade adjacent structures rapidly and seldom in the operable stage involves the parametrium, or by metastasis extends to other organs of the body. This variety, if seen in time, is more amenable to radical treatment than cancer of the cervical canal. All varieties of cancer of the uterus extend more rapidly to local structures, and is followed more quickly by metastasis in young, vigorous people than in old people. While many millions of dollars have been expended in research work to discover the cause of cancer, there is no positive evidence that the real cause is known. Special study has been along the lines of the parasitic theory, the cell autonomy and the biologic and biochemical nature of tumors. While no parasite has been discovered by any experimentation, this does not negative the fact that a specific germ is the cause, for the germ may be in the protoplasm of the cell and too small to be discovered by any power of the microscope yet devised. While cancer of the uterus does not usually appear until after the age of 30, and is more frequent between the ages of 35 and 55, it may develop in a girl of 15 or in a woman of 75. Cancer of the cervix is nearly always seen in women who have borne children, but I have often seen it in women who have had no children, and who probably never had sexual connection. If diagnosed and operated on in the early stages, the end results of cancer of the infravaginal cervix or the endometrium are far more encouraging than in cancer arising in the cervical canal, and the operation need not be so extensive, and may be performed in nearly every instance *per vaginam*. This is not true, however, in most cases of the

adenocarcinoma arising in the cervical canal, which so quickly invades the adjacent structures and must be widely removed in order to give the woman the best chances for recovery. Uterine myomata, with cancer of the uterus or cancerous involvement of the myomata, should be operated on by the suprapubic method. This association or involvement is rare. Cancerous involvement may result from continuity of cancer in the cervical canal or endometrium by metastasis from cancer in other parts of the body, or by the development of cancer in the epithelium of the glands of an adenomyoma. I recently removed a uterus with malignant involvement of myomatous tumors, caused by the extension of an adenocarcinoma in the cervical canal.

My experience in curettage, followed by the application of phenol and alcohol, encourages me in the belief that such treatment may often relieve pain and other symptoms, prolong life, and sometimes so change local conditions as to make operable a case that before such time was inoperable, in the sense that all involved structures could not be removed. In conclusion, let me repeat that until we know more about the cause and history of cancer, our success must depend on early diagnosis and prompt and thorough surgical treatment, being governed in the choice of operation by local conditions.

Expert Testimony

MR. EDWARD J. MCDERMOTT, Louisville: What are our remedies? First, each profession—especially the medical profession, which is called on most for expert testimony—must try to create a strong opinion, in its ranks and in its public associations, in favor of higher ethical standards, and must frown down its weak or corrupt members who allow themselves to be misused or besmirched as false or foolish witnesses. Second, the courts must be induced to inquire more fully into the qualifications of experts, and to handle, with more care and strictness, this clause of evidence which is often useful, and which can sometimes be corruptly used with success and impunity. This part of the reform must be accomplished by the lawyers and the courts. Third, legislation must be devised to strengthen the court's control of opinion-witnesses, and to prevent selfish and unscrupulous litigants from getting much benefit by hiring charlatans or cranks or dishonest, but shrewd and plausible men, of sufficient learning and experience, to enable them all the better to deceive a jury. It seems clear to me that the legislature has the power (1) to regulate the selection or calling of experts or opinion-witnesses, and (2) to regulate their compensation. It also seems clear to me that the legislature, in the interest of truth and for the protection of both the medical and the legal professions, should regulate both the selection and the compensation of such witnesses. The disreputable physician and the disreputable lawyer and their client now have such an unfair advantage of their reputable adversaries, that truth and justice are too often trampled down. As litigants with most money at their command may get the greatest number of experts, and the most expensive experts, the court should have the right (1) to prescribe a list of eligible men, (2) to limit the number to be called, and (3) to fix the compensation. No witness in any case should have a contingent fee. He should not have his compensation depend on the success of his testimony or his side. This is too great a temptation to partisanship. It may be wise (in the interest of the poor) to allow a lawyer to be employed on a contingent fee, for he is not a witness—he is not swearing to the right of his side—but there is no excuse for allowing a witness to be so tempted by self-interest to deviate from the truth where a deviation is so easy, and is never punishable, in an expression of a mere theory or opinion. Even contingent fees of lawyers, in damage suits and perhaps in other cases, should be subject to the scrutiny and control of the courts to prevent hardship and injustice to the poor in whose interest such fees are supposed to be allowed.

Inguinal Hernia

DR. B. F. VAN METER, Lexington: The simplest operation that focuses all effort on the complete removal and high ligation of the sac is the successful operation. The sac is not always recognized and identified by the occasional operator; sometimes it is never ligated at all, and then nothing but failure can result. Every hernia patient has the right to have laid before him, on the one hand, the comparative risk, the percentage of recurrences, the time of disability; on the other, the everlasting semidisability, and the danger of strangulation, with its enormous increased risk to life. There is small, but very definite danger from the anesthetic, when general anesthesia is used; when local anesthesia is used this danger is eliminated—a zero mortality in a hundred consecutive cases, two weeks' complete disability, two weeks of partial disability, with 95 per cent. of permanent cures.

Indications and Technic of Cerebral Decompression

DR. E. S. ALLEN, Louisville: The dominating factor in cerebral surgery is the effect of compression on brain tissue. While any other tissue may be compressed with comparative impunity, nerve tissue is compressed only at the cost of immediate loss of function, with slow restoration if pressure be relieved, and atrophy without regeneration if pressure be not relieved. Its high degree of differentiation makes it an easy prey to insignificant trauma, and its injury is frequently attended by early and easily recognizable symptoms. Local pressure and death of other tissue may pass unnoticed, but nerve fiber gives unmistakable sign and gives it regularly. The compression of nerve tissue, except in silent areas of the brain, will produce definite symptoms. Many of the lesions which affect the brain, and especially those which have a surgical bearing, do so by reducing the available space inside the skull. The symptoms of hemorrhage, tumor, etc., depend in the main on the compression which these various lesions exert directly on the brain. Realizing that cerebral compression results, ultimately, in medullary anemia, and medullary anemia in vasomotor paralysis, and vasomotor paralysis in bulbar starvation, with cardiac and respiratory paralysis, and that our principal guide in this intracranial pathology is arterial tension as recorded by the manometer, then I believe the chief indication for decompression must be when the tension reading reveals the fact that the struggle between the intracranial compressing force and the vasomotor center is becoming a life and death effort, and that it is best to interfere when the vasomotor strength is high and not wait until the compressing force is victorious and the arterial tension is dropping or undulating.

Acute Gastro-Intestinal Infection in Infants

DR. J. M. REES, Cynthiana: Since less than 10 per cent. of deaths due to intestinal disease occur in breast-fed infants, we should urge and encourage maternal nursing. While this is necessary in all classes, it should be especially insisted on among the ignorant and negligent. It requires but little experience, and may be done by those of very little intelligence and among the very poor, while artificial feeding is not successful unless carried on intelligently, and, at the same time, a certain amount of money is available to obtain reliable nourishment, especially pure milk. Too frequently, babies are taken from the breast when, with a little care and patience, lactation could be continued. We should point out the great danger a mother assumes when she undertakes artificial feeding without the necessary means or preparation. Mothers too often, in order to escape the hardships of breast feeding, remove the child from the breast, not seeming to understand that the puny, fretful, bottle-fed infant is infinitely more troublesome than the well-nourished, breast-fed baby that spends most of its time in sleep. The first feeding is always an experiment, and we should endeavor to begin with a mixture slightly weaker in fats and proteids than mother's milk, and increase in a gradual manner, until at the end of the first year the child is receiving plain cow's milk. Carefully fed infants, whose digestion is normal and whose feeding mixtures are prepared from fresh and clean milk, acquire an almost clock-like regularity in their habits, vomiting never occurs, and the bowel movements are yellow and come at regular intervals. Any change from this regularity is a signal of disturbance, which should be promptly investigated.

Colonic irrigation is, in many cases, as important as the initial purgation. By it any residue of feces or irritating secretions in the colon or rectum is removed, and, as it stimulates peristalsis, it assists in evacuating the small intestine. It also adds to the body an amount of fluid to compensate for the waste cause by the diarrhea. For the best results, the physician must personally attend to the irrigation, unless he has a competent nurse. This should be done two or three times during the first twenty-four or forty-eight hours; later, once daily is sufficient. Saline solution, at a temperature of 100 F., may be used, with a long rectal tube or catheter of sufficient caliber and stiffness to prevent it from kinking. The other local methods are the application of heat and counter irritation to the abdomen for their soothing effect; the use of cold for its antipyretic effect, and the application of heat when there is depression of the vital forces.

Other Papers Read

The following papers were also read: "The Present Status of Serum and Vaccine Therapy," by Dr. F. H. Montgomery, Danville; "Cancer of the Breast: Diagnosis and Treatment," by Dr. J. T. Reddick, Paducah; "Prophylaxis and Treatment of Scarlet Fever," by Dr. J. S. Lock, Barbourville; "Measles," by Dr. F. A. Frazer, Marion; "Prophylaxis and Treatment of Pneumonia," by Dr. J. C. S. Brice, Flemingsburg; "Abdominal Crises Caused by Pathologic Changes in Meckel's Diverticulum Other Than the Strangulation by Band," by Dr. George A. Heaton, Louisville; "Abscess of the Liver: Diagnosis and Treatment," by Dr. J. I. Rathbun, Russell; "Electricity in Diagnosis and Treatment of Disease," by Dr. J. J. Rodman, Owensboro; "Something Old and Something New in Medicine," by Dr. D. O. Hancock, Henderson; "Popliteal Aneurism, With Report of Matas Operation," by Dr. J. R. Nurnan, Covington; "Diagnosis and Treatment of Enterocolitis in the Adult," by Dr. E. A. Stevens, Mayfield.

State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 8-9. Sec., Dr. F. T. Murphy, Brinkley; Homeopathic, Little Rock, November 11. Sec., Dr. P. C. Williams, Texarkana; Eclectic, Little Rock, November 8-9. Sec., Dr. G. A. Hinton, Hot Springs.

CONNECTICUT: Regular, City Hall, New Haven, November 8-9. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, November 8. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, November 8. Sec., Dr. Thomas S. Hodge, 19 Main St., Torrington.

FLORIDA: Palatka, November 9-10. Sec., Dr. J. D. Fernandez, Jacksonville.

LOUISIANA: Homeopathic, New Orleans, November 7. Sec., Dr. John T. Crebbin, 1207 Maison Blanche Building.

MAINE: City Council Rooms, Portland, November 8-9. Sec., Dr. Frank W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, November 8-9. Sec., Dr. Edwin B. Harvey.

NEBRASKA: State Capitol, Lincoln, November 9-10. Sec., Dr. E. Arthur Carr, 141 S. Twelfth Street.

NEVADA: Carson City, November 7-9. Sec., Dr. S. L. Lee.

TEXAS: Palestine, November 22-24. Sec., Dr. R. H. McLeod.

WEST VIRGINIA: Morgantown, November 14-16. Sec., Dr. H. A. Barbee, Point Pleasant.

Wyoming June Report

Dr. S. B. Miller, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, June 22-24, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 10, all of whom passed, including one osteopath. Sixteen candidates were licensed through reciprocity. The following colleges were represented:

	PASSED		
College	Year Grad.		Per Cent.
Rush Medical College	(1910)		88.4
Atlanta School of Medicine	(1908)		76.4
State University of Iowa, College of Medicine	(1910)		88.7
University Medical College, Kansas City	(1904)		83
Creighton Medical College	(1909)	86.4,	87.3
Lincoln Medical College	(1910)	79.3,	90.5
Columbus Medical College	(1886)		75.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1897)	Dist. Colum.
Northwestern University Medical School	(1909)	Illinois
College of Phys. and Surgeons, Chicago	(1904) (1907)	Illinois
Rush Medical College	(1902)	Iowa
Drake University	(1907)	Iowa
Sioux City College of Medicine	(1903)	Iowa
Louisville Medical College	(1902)	Indiana
Baltimore Medical College	(1907)	Vermont
Maryland Medical College	(1904)	W. Virginia
University of Michigan, Homeopathic College	(1893)	Minnesota
Barnes Medical College	(1902) (1909)	Missouri
Eclectic Medical Institute, Cincinnati	(1908)	Iowa
Starling Medical College, Columbus	(1904)	Ohio
Medical College of the State of South Carolina	(1898)	S. Carolina

New Mexico July Report

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Sante Fé, July 11-12, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. Twenty-one candidates were licensed to practice on presentation of satisfactory credentials. The following colleges were represented:

	PASSED		
College	Year Grad.		Per Cent
North Carolina Medical College	(1906)		77
Epworth College of Medicine	(1910)		87.2
Memphis Hospital Medical College	(1894)		75.1

	LICENSED ON CREDENTIALS		
College	Year Grad.		
Gross Medical College	(1893)		
Hahnemann Med. Coll. and Hospital, Chicago	(1880)		
College of Physicians and Surgeons, Chicago	(1906)		
Keokuk Med. Coll., Coll. of Phys. and Surg.	(1906)		
College of Physicians and Surgeons, Keokuk	(1890)		
University of Louisville	(1901)	(1909)	(1910)
Louisville Medical College	(1903)		
Hospital College of Medicine, Louisville	(1898)		
College of Physicians and Surgeons, Baltimore	(1888)		
Barnes Medical College	(1909)		
St. Louis Coll. of Phys. and Surg.	(1904)		(1910)
Washington University, St. Louis	(1909)		
University Medical Coll., Kansas City	(1901)		(1903)
Coll. of Phys. and Surg., Kansas City	(1897)		
Columbia University, Coll. of Phys. and Surg.	(1901)		
Vanderbilt University	(1889)		
University of Vermont	(1904)		

Book Notices

LEHRBUCH DER KINDERHEILKUNDE FÜR ÄERZTE UND STUDIERENDE. Von Dr. med. Bernhard Bendix, Privatdozent für Kinderheilkunde Dirigierender Arzt der Charlottenburger Säuglingsklinik. Sechste, Durchgesehene und Verbesserte Auflage. Paper. Price, 15 marks. Pp. 671, with 83 illustrations. Wien: Urban & Schwarzenberg, 1910.

Professor Bendix has for many years held a foremost place as an authority on diseases of children. The present edition of this work, the sixth, has been extensively revised and much of it wholly rewritten to include the latest advances in every department of pediatrics. This is especially true of the chapters on nutritional disorders in infancy. The book everywhere gives the mature observations of one of Germany's greatest pediatricians, and is highly commended to every physician who is interested in diseases of children.

THE VEGETABLE PROTEINS. By Thomas B. Osborne, Ph.D., Research Chemist in the Connecticut Agricultural Experiment Station, New Haven. Price, $1.20 net. Cloth. Pp. 125. New York: Longmans, Green & Co., 1909.

Until the appearance of this monograph, one of a series on biochemistry, the data on the chemistry of plant proteins had not been collected and presented in a systematic way. It was not until recent years that the importance and the practical value of knowledge regarding vegetable proteins were appreciated and then largely through the well-known researches of the author himself. As a large portion of this monograph is in reality an abstract of the author's investigations, it is very accurate and covers the most recent work in this field.

The chemistry of plant proteins is considered historically, beginning with the study of gluten in wheat and covering the more recent discoveries of other proteins in various plants.

The book is not intended as a laboratory guide or handbook, but is a complete collection of descriptions of the various plant proteins, which have been investigated. Aside from the complete descriptive matter, the monograph contains tables and a very complete and valuable bibliography of the protein chemistry literature.

PHYSICAL EXAMINATION AND DIAGNOSTIC ANATOMY. By Charles B. Slade, M.D., Chief of Clinic in General Medicine and Instructor in Physical Diagnosis in the University and Bellevue Hospital Medical College, New York. Cloth. Price, $1.25. Pp. 146, with 36 illustrations. Philadelphia: W. B. Saunders Co., 1910.

The author has attempted to give in a concise manner practical points and definitions in the technic of physical examination, chiefly of the thorax and abdomen, with some reference to information that may be obtained by general inspection. The book, intended for students, is elementary in character, deals chiefly with the normal subject, and does not pretend to enter into the diagnosis of specific pathologic conditions, making reference to them only to illustrate the application and object of the different methods employed to elicit information. The topography of the chest and abdomen and the various anatomic structures within is well shown by numerous diagrams, and a few photographs are used to illustrate certain points. It is a practical and useful elementary exposition of the subject of physical diagnosis.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By Dr. Carl von Noorden, Professor of the First Medical Clinic, Vienna. Part VIII, Inanition and Fattening Cures. Part IX, Technic of Reduction Cures and Gout. Cloth. Price, $1.50 each. Pp. 103 and 112. New York: E. B. Treat & Company, 1910.

The scientific considerations which are involved in the attempt to restore the nutrition to normal in emaciated individuals are first explained in chapters dealing with the phenomena of inanition and undernutrition and then the practical application of these principles in the treatment of these cases is explained. The exposition of the calculations necessary to determine the individual's nutritive requirements and the addition of several important tables make this part (Part VIII) of the book a very valuable guide. The important fact that a mere increase of adipose tissue does not always secure the highest grade of nutrition is particularly emphasized and the inability of the organism in certain conditions to avail itself of the increased pabulum furnished is clearly brought out. Incidentally the author exposes the fallacy of attempting to restore a normal condition of nutrition in certain tissues by supplying merely the component elements of the tissue. The use of calcium in rickets on this principle is shown to be fallacious. In a similar way the absurdity of the claims for the use of lecithin in nervous disorders is shown. It is a defect of the work that so much prominence is given to a much-advertised American breakfast food.

Part IX treats of reduction cures and puts a method of treatment which began in empiricism on a scientific basis. For the specific plans such as the Banting cure, etc. the author substitutes exact calculations of the needs of the patient based on his body weight and the calorific value of the different classes of food. The uric acid theory of gout and renal lithiasis is discussed with a frank admission of the paucity of our actual knowledge. The dietetic treatment is based on the principle of excluding exogenous purins and determining by experiment the degree of tolerance of the individual patient for purins on the same principle as we determine the power of the individual diabetic to metabolize sugar. The purin content of various articles of diet is described. The author makes no distinction between white and dark meats, as his own experience as well as the results of chemical analysis has taught him that the white meats present no advantage over the red in this respect. The uselessness of the so-called uric acid eliminants for the treatment of gouty arthritis is emphasized, although the author admits that we can influence to some extent the solubility of uratic deposits in the genito-urinary tract. This volume will form a useful and suggestive manual for those who treat this class of cases which is undoubtedly more numerous in this country than commonly supposed.

Medicolegal

Corporations Cannot Practice Medicine

The Court of Appeals of New York says: In re Cooperative Law Company (92 N. E. R. 15), where it holds that a corporation can neither practice law nor hire lawyers to carry on the business of practicing law for it, that it cannot do so any more than it can practice medicine or dentistry by hiring physicians or dentists to act for it. The legislature, in authorizing the formation of corporations to carry on "any lawful business," did not intend to include the work of the learned professions. Such an innovation, with the evil results that might follow, would require the use of specific language clearly indicating the intention. Business in its ordinary sense was aimed at, not the business or calling of members of the great professions, which for time out of mind have been given exclusive rights and subjected to peculiar responsibilities.

Salary of County Health Officer

The Supreme Court of Mississippi says, in Adams County vs. Aikman (52 So. R. 513), that the latter-named party had been for several years health officer for Adams County. In July, 1907, the board, by order on its minutes, fixed his salary for the 12 months next thereafter at $50 per month. No further order was entered with reference to his salary, but he continued to receive as such the sum of $50 per month until the expiration of his term, on April 30, 1909. On May 15, 1909, he was reappointed as such health officer. At its June, 1909, meeting, the board of supervisors, by order duly entered on its minutes, over his objection, fixed his salary at $300 per annum. At the August meeting of the board he filed his claim for an allowance of $50 per month, which claim was rejected by the board and a warrant directed to be issued to him for $75, or $25 per month, which he declined, and shortly afterwards brought suit for $150 for the months of May, June and July. In the justice court, where he brought suit, he recovered judgment, and also in the circuit court, to which an appeal was taken. But the judgment of the Circuit Court is reversed by the Supreme Court, which holds that he was entitled to recover from the county only the sum of $25 per month, the salary fixed by the board, and that, if dissatisfied with that allowance, he should have appealed from the order of the board fixing the same. Under section 2,509 of the Mississippi Code of 1906, it is the duty of the board of supervisors to fix the salary of a county health officer in advance of his appointment; but, in the event it fails to do so, it may fix his salary at a later date. To hold otherwise would result in depriving such officer of any compensation for services which he might have rendered after his appointment and before his salary was fixed, for the reason that he can receive no compensation except a salary fixed by the board. There is no conflict herewith in the prior decision that, where a salary of a health officer has been fixed by order of the board, it cannot be subsequently reduced to such an amount as virtually to abolish the office.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

October 8

1. *The Carbohydrate Diathesis. W. E. Deeks, Canal Zone.
2. *Treatment of Diabetes Mellitus. T. S. Hart, New York City.
3. Anesthesia. J. T. Gwathmey, New York City.
4. *Residual Appendix. O. C. Smith, Hartford, Conn.
5. *Treatment of Typhoid with Vaccine. A. W. Hollis, New York City.
6. Hemophilia Treated by Transfusion. M. Hahn, Washington, D. C.
7. *Typhoid Fever. A. K. Sallom, Philadelphia.

1. **Carbohydrate Diathesis.**—Deeks maintains that patients suffering from one or more of the following disorders are consumers of an excess of carbohydrate food: indigestion, gastric ulcer, decaying teeth, stomatitis, constipation, chronic

pharyngitis, true rheumatic bronchitis, anemia, most dysmenorrheas, enuresis, etc. He believes the diet to be indirectly responsible for appendicitis, and frequently for tuberculosis. He does not state what the exact nature of the products of carbohydrate fermentation is, but he contends that his statements can be verified clinically, and from a humanitarian standpoint the results are worthy of a further investigation. In the tropics, unless engaged in active physical exercise, the nearer men keep to a diet consisting of meat, fish, poultry, milk, green vegetables and fruit, the less they suffer. In this combination is found an energizing, tissue-forming, low heat-producing food, free from fermentative properties and containing enough of the indigestible vegetable cellulose to stimulate intestinal peristalsis and elimination. Sugars should not be consumed at all, except in solution, on an empty stomach, and then sparingly. The amount of starch ingested should be proportionate to the physical exertion involved.

2. **Treatment of Diabetes Mellitus.**—Hart emphasizes the importance of taking proper care of diabetics with the mild type of the disease, and of subjecting them to suitable restrictions early in its course. By the painstaking control of the diet, under the guidance of accurate records based on careful observation, the progress of diabetes, in the majority of instances, may be so checked that it will never reach the most severe form. In other instances, although the disease becomes more severe in spite of our best efforts, we are nevertheless able materially to hinder the progress of the malady, and we may save our patients much suffering and lengthen their lives by a number of years.

4. **Residual Appendix.**—Smith believes that from our knowledge of the pathology of appendicitis and the comparative frequency with which appendicitis recurs sooner or later following an appendiceal abscess or general peritonitis caused by appendicitis, we must conclude that the residual appendix—that is, the appendix left after abscess and drainage—is much more subject to inflammation than the appendix which has not been diseased. If its mucosa is continuous with the cavity of the cecum it is still exposed to infection. In addition to that, its circulation has usually been partially destroyed, it has become adherent to the abdominal wall, or some other organ, and is in a position to be strained or traumatized. Moreover, there may be residual concretions and residual pockets of pus within the lumen which did not escape at the primary attack. If these deductions are correct there can be no doubt of our duty in advising a secondary operation, and explaining thoroughly to the patient the reasons for, and the advantages of, this procedure.

5. **Typhoid Fever.**—In the series reported by Hollis, 21 patients were treated by the older method of hydrotherapy, either by the tub bath or by sponging; 11 patients were treated with vaccine without hydrotherapy. In the remaining 5 cases the patients were too short a time under treatment to make any comparisons. The diet, in general, was of the high calorie variety. No drugs were employed, but strychnin and whiskey were used as stimulants in the severe cases. The bowels were moved by enemata. The patients who were treated by hydrotherapy, barring a few who were given sponge baths because of poor response to tubbing, had a tub bath at a temperature of from 80 to 90 F. for 15 minutes, with friction, every 4 hours from noon until midnight inclusive if the rectal temperature was 103 F. or higher. At 8 a. m. all received a warm soap and water sponge. Those treated by vaccination received no baths other than a daily warm soap and water sponge. In a very few cases 250,000,000 bacilli were employed but no different clinical or laboratory effect could be noticed between the smaller and larger doses. No fever reaction was obtained. No case ended by crisis. No death occurred among the vaccinated patients; 4 occurred in the other series, one from hemorrhage, one from toxemia, one from perforation and one from pulmonary thrombosis with necrosis of the whole left upper lobe of the lung. Headache, gastrointestinal symptoms and toxemia were far less frequent in the vaccinated series than in the other cases, and the absence of discomfort seemed striking, while convalescence was more rapid.

7. **Typhoid Fever.**—Sallom gives charts of the mortality curve of morbidity of 68,943 cases of typhoid observed in Philadelphia, from January, 1898, to June, 1909. Of this number 8,012 died, a mortality of slightly over 11.75 per cent. Mortality rises in February and March, falls in April and rises again in May, reaching its acme in July. It then falls again and rises toward October. The relationship of morbidity to mortality is striking. Morbidity reaches its lowest ebb in July, and is highest in September. The maximum of morbidity coincides with the minimum of mortality. The author believes that season has an important effect on mortality. With the maximum morbidity a minimum percentage of mortality is present, and vice versa, as morbidity falls mortality rises.

New York Medical Journal

October 8

8 Medical Photography. N. T. Beers, Brooklyn, N. Y.
9 Radiograms of Digestive Tract. L. G. Cole and M. Einhorn, New York City.
10 Intranasal Sarcoma. R. B. Scarlett, Philadelphia.
11 Bone Formation in the Mastoid Process. E. Amberg, Detroit.
12 The Doctor's Duty in Tuberculosis. J. Girdwood, Baltimore.
13 Inversion of the Puerperal Uterus. R. E. Davison, Pittsburg, Pa.
14 Retroversion of the Uterus. E. A. Schumann, Philadelphia.
15 Epidemics Among the Alaska Indians. S. A. Savitz, U. S. S. *Gedney.*
16 Alcohol and Its Relation to Legal Medicine. M. Keschner, New York City.
17 Plea for More Vigorous Campaign Against Malarial Fevers. G. E. Henson, Crescent City, Fla.

Boston Medical and Surgical Journal

October 6

18 Immunity with Special Reference to Vaccine Therapy. T. Leary, Boston.
19 *Types of Exophthalmic Goiter. J. G. Mumford, Boston.
20 Hysteria, with Necropsy. W. R. Woodbury and C. Reed, Boston.

19. **Exophthalmic Goiter.**—The first case reported by Mumford was that of a woman, aged 42. At the age of 37 she consulted her physician for what appeared to be a trifling heart lesion, for she found herself troubled with occasional dyspnea on exertion. Her physician discovered a slight mitral leak and some dilatation of the heart. Careful treatment and prolonged rest resulted in no benefit; gradually there developed further a constant distressing dyspepsia, pain and nausea after eating and a state of continual apprehension. These symptoms persisted for two years, when there developed further a mild, bilateral tremor of the fingers. At this stage she consulted Mumford and he suggested the diagnosis of exophthalmic goiter. Within a month there developed a series of characteristic symptoms: the thyroid became enlarged, with a typical thrill; the eyes gradually became prominent, with lagging of both lids and widening of the palpebral fissure; and the tachycardia became pronounced, the rate of the heart ranging between 110 and 130. Mumford instituted the use of hydrobromate of quinin, neutral, in 5-grain capsules, 3 times a day, and continued the medication without intermission for 15 months. During the early months of treatment the patient experienced great relief.

Twelve months after the beginning of the quinin treatment, through the accident of a serious grief, all her discomforts reappeared; the eyes became prominent and anxious, with their associated abnormal lid phenomena; her tachycardia returned; the heart became irregular; dyspnea became extreme; she was troubled with a constant diarrhea and distaste for food; profuse sweating became pronounced; the tremor returned in force; and the right lobe of the thyroid rapidly doubled in size. Thyroidectomy was done, and 8 months after the operation the patient appeared to be well, except for a slight exophthalmus.

The second patient, a vigorous young woman, of active habits, about 32 years of age, and the mother of 4 children, suddenly became extremely nervous; within a week she took on symptoms that suggested to her physician a rapid neurotic breakdown; she was sleepless, fretful, irritable and almost impossible to live with, as her friends asserted. Within a week after the surprising development of these symptoms her physician discovered a marked tumor of the thyroid gland. There was no other evidence of hyperthyroidism, with the

exception of the nervousness; there was no exophthalmos, no tachycardia or palpitation, no tremor, no digestive disturbance, no sweating; in fact, the diagnosis was founded almost solely on the nervousness and the rapidly enlarging thyroid.

This patient's physician, Mumford states, had the courage of his convictions, and his convictions were sound and accurate. Without stopping to employ drugs, and without waiting to see the development of the case, he proceeded at once to a surgical operation, and his activity seems to have been justified by the results. He removed the whole of the left lobe of the thyroid, leaving, however, the isthmus, with a considerable pyramidal lobe, and the whole of the right lobe. The lobe removed was the most affected; those parts which were left seemed to be but slightly hypertrophied. The patient promptly recovered from the operation and regained her normal health. Her symptoms of hyperthyroidism gradually returned after a year and became more settled and more pronounced than before. A second operation was decided on. Every reasonable operative precaution was taken to avoid increasing the hyperthyroidism. The operation occupied about 35 minutes and was extremely tedious, but the patient bore it well. Trouble began immediately after the patient was put to bed, however; she sank rapidly and died of acute hyperthyroidism about 36 hours after the operation.

Lancet-Clinic, Cincinnati

October

21 *Surgery of the Great Sciatic Nerve. B. M. Ricketts, Cincinnati.
22 Erysipelas as a Complication of Mastoid Disease. J. A. Stucky, Lexington, Ky.
23 What! Not Blind Yet? G. M. Gould, Ithaca, N. Y.

21. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1220.

American Journal of Medical Sciences, New York

October

24 *Dilatation of the Aorta. T. McCrae, Baltimore, Md.
25 *Heart Block with an Indication of Genuine Hemisystole. A. Stengel and W. Pepper, Philadelphia.
26 *Treatment of Aneurysm of the Aorta. A. A. Eshner, Philadelphia.
27 *Orthodiagraphy in Pathologic Conditions of the Heart and Aorta. T. A. Claytor and W. H. Merrill, Washington, D. C.
28 *Etiology of Subacute Infective Endocarditis. E. Libman and H. L. Celler, New York.
29 Syphilitic Febrile Pylephlebitis. A. R. Edwards, Chicago.
30 Treatment of Cardiospasm and Idiopathic Dilatation of the Esophagus. I. Einhorn, New York.
31 *Medical Uses of Rectal Infusions. H. Sewall, Denver.
32 *Roentgen-Ray Treatment of Status Lymphaticus. B. K. Rachford, Cincinnati.
33 *Splenomegaly Associated with Marked Anemia of the Pernicious Type. R. D. Rudolph and C. E. C. Cole, Toronto, Canada.
34 *Spinal Cord Lesions in Two Cases of Pernicious Anemia. C. N. B. Camac and L. S. Milne, New York.

24. **Dilatation of the Aorta.**—McCrae claims that dilatation of the aorta, considered apart from aneurysm, is relatively common and probably occurs more frequently than aneurysm. Two main etiologic factors stand out: (a) acute infections, notably rheumatic fever, and (b) those which cause general sclerotic changes. The symptoms often suggest disease of the heart itself. The physical signs are often very definite, of which visible pulsations in the upper interspaces, dulness over the upper sternum and adjoining interspaces, and the fluoroscopic examinations are the most important. Pressure signs are comparatively common, but are rarely severe. The diagnosis, as a rule, can be readily made from aneurysm. The outlook as regards dilatation is good.

25. **Heart-Block.**—The case of heart-block which furnished the basis for the observations made by Stengel and Pepper is said not to have been of such exceptional character that a separate publication of the clinical features would be of value, but the numerous tracings which were obtained furnished some interesting information and one of these proved of unusual importance in throwing some light on the possibility of true hemisystole. Although for a time complete heart-block existed and later partial heart-block, during the patient's stay in the hospital no Stokes-Adams syndrome was present. The complete block, after the administration of atropin, promptly changed to an incomplete block with a 3 to 1 rhythm, then to a 2 to 1 rhythm, and later to a normal rhythm. The 2 to 1 rhythm and the normal rhythm for a time alternated one with the other, and a number of tracings were obtained showing this change while the tracings were actually being made. It furnished indications of genuine hemisystole during the transition of the normal rhythm to a 2 to 1 rhythm. From this same tracing it could be demonstrated that the origin of the *c* wave is the right ventricular contraction, rather than the carotid pulsation. The *a-c* interval is longer in such cases as this during normal rhythm, while it may be normal in length during partial block. The auricular rate becomes faster when the normal rhythm changes to a 2 to 1 rhythm, and slower when the opposite change occurs.

In attempting to determine the cause of greater auricular rate during 2 to 1 or 3 to 1 rhythm than when no dissociation existed, it occurred to the authors as reasonable that the interference with auricular outflow, which is present at each alternate or third auricular contraction, would necessarily leave the auricle relatively unemptied and would thus occasion an earlier stimulus to contraction, which would result in a more rapid rate. When a change from normal to 2 to 1 rhythm occurs the quickening of auricular rate is less prompt than is the showing when a 2 to 1 rhythm changes to the normal. An explanation for this circumstance may be found in the fact that resumption of normal rhythm after a 2 to 1 rhythm at once relieves the auricle of back pressure and the consequent stimulus to increased rate. Such a sudden relief is followed by prompt re-adjustment of auricular activity, whereas the effect of the change from normal to a 2 to 1 rhythm and the consequent gradual overfilling of ventricle and auricle would be met by a slower response. In this case, during the time of complete block, the ventricle rhythm was not at all times regular, although the ventricle usually contracted about 20 times to the minute, or about every three seconds; at other times there were irregular pauses, the longest being 5.4 seconds. There were, however, no extrasystoles at any time. It is known from physiologic experiment that, owing to poorly developed or retained independent rhythmicity, a portion of the ventricle, as, for example, the severed apex of the ventricle, tends to cease contracting after a time and will resume regular contractions only after an external stimulation. It is possible, therefore, that the continued action of the ventricle sometimes for long periods and despite occasional long pauses in cases of complete block may be due to the stimulus of distention with blood resulting from the continued auricular action.

26. **Aneurysm of the Aorta.**—Eshner concludes that aneurysm of the aorta is essentially a fatal disorder, although exceptionally spontaneous cure takes place. Accordingly, treatment can, as a rule, be only palliative, relieving symptoms and prolonging life. Deligation is inapplicable from anatomic considerations. Rest, ergot, iodids, gelatin, calcium chlorid, adrenalin chlorid, and introduction of foreign substances, with or without the passage of a galvanic current, have been employed. Horsehair, catgut, needles, watchspring and wire of various kinds have been introduced, with varying results, and a galvanic curve has been passed through conducting substances. Wiring with electrolysis has been employed in a moderate number of instances, with satisfactory results in the majority. The procedure has proved simple and safe, but it is applicable only to sacculated and not to fusiform aneurysms.

27. **Orthodiagraphy.**—According to Claytor and Merrill the orthodiagraph is of real value to the clinician, and as it becomes more commonly used we may be able to formulate some useful facts which as yet it is unwise to attempt. The instrument is by no means necessary in all cases, but may be an aid to diagnosis in many more or less obscure pathologic conditions of the heart and aorta.

28. Abstracted in THE JOURNAL, May 28, 1910, p. 1806.

31. **Medical Uses of Rectal Infusions.**—Sewall believes that it must be admitted that the favorable results accompanying the use of proctoclysis in appropriate medical cases indicate that this method of quasi-internal hydrotherapy deserves such a thoroughly detailed study as will accurately establish its indications and limitations in medical therapeutics.

32. **Status Lymphaticus.**—A study of the two cases mentioned by Rachford indicate that the disappearance of the lymphocytosis under the roentgen-ray treatment of the thymus in status lymphaticus is so marked that a careful study of the blood state in this condition will give important information not only as to the efficacy of the treatment, but as to the length of time this treatment should be continued. It will be wise, perhaps, to discontinue treatment when the lymphocytosis disappears, even though there still be left some cough and stridor. The chloro-anemia which is not improved under the roentgen-ray treatment may be aggravated if it be continued too long. Following the roentgen-ray treatment in these cases, hypodermic injections of iron, with careful feeding and fresh air, may be necessary to restore the blood state to a normal condition. In both of the cases here reported slight cough and stridor were present when the roentgen-ray treatments were discontinued, but disappeared entirely a few weeks later.

In the roentgen-ray treatment of status lymphaticus in infants and young children, although no portion of the body is exposed to the influence of the rays except that which directly holds the thymus, there are the following results of this treatment:

1. The hyperplastic thymus decreases in size and the cough, stridor and asthma disappear.
2. The enlarged spleen and lymph nodes decrease in size.
3. The exhaustion and general feebleness of constitution gives place to normal conditions of health and strength, and physical and intellectual growth are greatly stimulated.
4. There is rapid disappearance of the marked lymphocytosis which characterizes this disease.
5. Excessive physiologic action of the thymus gland is controlled.

The slight return of the symptoms, stridor, cough, etc., at intervals of three or four months in one of the cases, and the quick control of these symptoms by one or two exposures to the roentgen-ray, indicate that the gradual regeneration of the thymus following the roentgen-ray treatment may be accomplished by a gradual reproduction of the same pathologic conditions, hypersecretion, etc., which were present before the treatment was begun.

33. **Splenomegaly.**—The blood-picture in the case suggested a diagnosis of pernicious anemia; the marked number of nucleated red cells (13,000), and especially the great proportion of megaloblasts (29 per cent.), making it probable that it was the plastic form of this disease. The splenomegaly present, although being unusual in pernicious anemia, would by no means exclude it, as cases are on record in which the spleen was quite large and in which the disease was undoubtedly of the pernicious type. Osler records such a case, which was at first taken to be one of splenic anemia, but subsequently came to necropsy and proved to be one of pernicious anemia, and in something like 1 per cent. of all cases of pernicious anemia the spleen is so large as to reach to the umbilicus. But assuming that the case be one of pernicious anemia, even then it presents several most unusual features. In the first place the disease commenced at the age of 8 years, if not earlier, which is very unusual. Again, it has lasted for at least 20 years, and the patient is still in comparatively good health; and yet the longest cases recorded, apart from 6 cases of apparent recovery, only lasted between 14 and 15 years. Further, according to the patient's history, he was so well between the ages of 14 and 28 that he was never laid up nor did he require any medical advice, that is, he seemed to have a remission of 14 years, and yet the longest recorded remission from prostrating symptoms on record is 6 years, although McPhedran recently reported a case in which there was a remission for 17 years.

As regards splenic anemia, the enormous size of the spleen with the marked anemia and a normal differential white blood-count would superficially suggest such a diagnosis, but the very profoundness of the anemia would be against this conclusion, and further, the fact that the anemia was always of the pernicious form with a high color index would seem to exclude this diagnosis. Other forms of splenomegaly with anemia, such as congenital syphilis, tumor, malaria, and even a possibility of filaria were all carefully weighed and excluded. The case would appear to be one either of pernicious anemia of an exceptionally prolonged type, commencing at an exceptionally early age, and associated with an exceptionally large spleen, or one of splenic anemia with an exceptional blood-picture.

34. **Cord Lesions in Pernicious Anemia.**—These two cases illustrate two of the types of nervous-system involvement occurring in the course of pernicious anemia. In the first case, which had the longest and more pronounced history of anemia, the nervous symptoms were at a minimum and the posterior columns of the cord, particularly in the cervical region, alone showed degeneration, characteristically patchy in distribution. In the second case, the nervous involvement, particularly in the later stages, overshadowed the anemia. Here the spinal cord presented very extensive, yet incomplete degeneration with slight replacement gliosis in the posterior columns, and also a similarly irregular but more diffuse degeneration in the lateral tracts, which, however, was a rather less complete and apparently somewhat more recent, process.

Woman's Medical Journal, Cincinnati

September

35 Diabetes Mellitus. L. L. Gannett, Adams, N. Y.
36 Athletics in Our Schools and Colleges. A. Camp, White Plains, N. Y.
37 Prenatal Influences. J. G. Wildman, Toronto, Canada.

Atlanta Journal-Record of Medicine

September

38 Early Diagnosis of Peritonitis. R. M. Harbin, Rome, Ga.
39 Practical Aids in Medical and Surgical Diagnosis. L. M. Gaines, Atlanta, Ga.
40 Chronic Non-Gonorrheal Infections of the Prostate. E. G. Ballenger, Atlanta, Ga.
41 Hypertrophied Tonsils and Adenoids an Etiologic Factor in Backward Children. G. H. Cooper, Opelika, Ala.
42 Considerations in Surgical Convalescence. H. P. Cole, Mobile, Ala.
43 Nature of Neurasthenia. T. A. Williams, Washington, D. C.

Journal of the Michigan State Medical Society, Battle Creek

October

44 *Medical Organization, Education and Legislation in Michigan. J. Carstens, Detroit.
45 The Profession of Medicine. E. T. Abrams, Dollar Bay.
46 *Incontinence Following Rectal Operations. L. J. Hirschman, Detroit.
47 Gynecology. R. R. Smith, Grand Rapids.
48 Tuberculin: Its Value in the Diagnosis and Treatment of Tuberculosis. L. W. Howe, Coldwater.
49 Distressing Bladder Symptoms. F. W. Robbins, Detroit.
50 *Varicose Ulcers of the Leg. D. W. Roos, Manistique.

44. Abstract of this appears in department of society proceedings this issue.

46. **Fecal Incontinence.**—Hirschman says that if one is familiar with the anatomy of the sphincter muscles, avoids the use of the actual cautery or the injection of escharotics, is careful not to injure the muscular layers of the bowel in excising hemorrhoids, incises the sphincters at right angles in excising fissures or fistulas, and uses common sense in his after-care—avoiding packing and using drainage—there is no reason why incontinence of feces should ever be held up as a reproach to those who are doing honest and conscientious work in rectal surgery.

50. **Varicose Ulcers.**—The formula most frequently used by Roos in the treatment of these ulcers is the following:

℞			gm. or c.c.
Gelatin	℥j	or	30
Zinc oxid	ʒss		15
Glycerin	ʒxiv		55
Water	℥iii		90

Mix and prepare over a vapor or hot-water bath.

The amount of any of these ingredients may be varied, the other medicants, such as ichthyol or boric acid, may be added. This is spread, while quite warm, over the entire surface of the cleansed and disinfected leg by means of a brush. When the paste begins to harden, a muslin bandage is placed around the leg, and a second coating applied, and this is fol-

lowed by a second muslin bandage. A window must then be cut through the dressing directly over the ulcer, through which dusting powder and absorbent material may be applied daily. This dressing may remain for from 3 to 7 days and is easily removed with hot water. Later, it may remain 2, 3 and even 4 weeks. It exerts a gentle elastic pressure, and is much more comfortable than an elastic bandage or stocking. Roos says that this dressing will also be found of good value as a prophylactic during pregnancy, when these veins sometimes become engorged and extremely painful.

Quarterly Bulletin of Northwestern University Medical School, Chicago

September

51 Old World Uncinariasis. A. A. Goldsmith, Chicago.
52 Experimental Blastomycosis. P. D. Gutierrez, Chicago.
53 Subcutaneous Traumatic Rupture of the Liver. E. C. Riebel, Chicago.
54 Blood-Vessel Surgery. V. D. Lespinasse, Chicago.
55 The Teaching of Infant Feeding. I. A. Abt, Chicago.
56 Desmoid Test in Gastric Disturbances. L. J. Osgood, Chicago.
57 Congenital Hydronephrosis. C. Smith, Spokane, Wash.

Maryland Medical Journal, Baltimore

October

58 The General Practitioner Then and Now. F. B. Smith, Baltimore.
59 *Value of Employment of Patients in State Hospitals. R. P. Winterode, Catonsville.
60 Benjamin Rush and Early American Medicine. H. M. Cohen, Baltimore.

59. Employment of Patients.—Winterode in summarizing his paper states that the remedial benefit from a therapeutic standpoint is as follows:

To the Curable Cases.—When instituted in the incipiency of psychoses it offers an opportunity for early mental restitution, thereby affording facilities for the treatment of new cases.

To the Incurable Cases.—It is a means of re-education, transforming those of filthy and vicious habits with destructive inclinations into tidy, contented and useful members of the household.

To Alcoholic Psychoses and Drug Habitues.—It acts as a prophylactic, lessening the predisposition to relapse by creating new habits, instruction in new vocations, which will encourage inclination along different paths having more favorable environments and different associates.

Farm Colony.—It relieves congestion, admitting of classification, with home environments and greater amount of freedom.

Economic Value.—This consists in utilization of products in the hospital, manufacture of which has been the means of restoring the patients to health. The saving is in cost of furniture, clothes and other articles which may be destroyed; also in extra supervision of patients to prevent assaults, to say nothing of the quantities of hypnotics which would be necessary were they not kept busy.

Cooperation of state industries, Winterode says, provides a market free from competition with organized labor; produces, by means of the hospital, articles cheaper and better suited for their needs at sufficient profit than can be purchased on the open market; encourages development of other industries, and also acts as an incentive to instruct patients in skilled labor, which will come in good stead when discharged. This will take place as follows:

To the State.—Relief of burden of taxation, the necessary consequence were they to become charges for life.

Farm Colony.—The most economical plan of caring for the insane, with rational reduction of accommodations as well as maintenance, without reducing essential comforts.

Ethical Value.—Placing in homelike surroundings, with supervision, where pernicious habits are corrected, provides a disciplinary agent and reorganizes habits, or, in other words, prepares the individual for competition with his fellow-men.

Journal of the Tennessee State Medical Association, Nashville

September

61 *Treatment of Salpingitis. J. H. Carter, Memphis.
62 Surgical Aspect of Epilepsy. G. G. Buford, Memphis.
63 Treatment of Acute Ailments in Persons Addicted to the Habitual Use of Narcotic Drugs. G. E. Pettey, Memphis.

61. Abstracted in THE JOURNAL, April 30, 1910, p. 1467.

United States Naval Bulletin, Washington, D. C.

October

64 *Insanity in the Navy. H. Butts, U. S. Navy.
65 Presence and Prevalence of *Necator Americanus* in Samoa. P. S. Rossiter, U. S. Navy.
66 Problems of Sanitation in Landing and Expeditionary Service in Tropical and Subtropical Regions. Translation P. J. Waldner, U. S. Navy.
67 *Helminthologic Technic. P. E. Garrison, U. S. Navy.
68 Improvised Incubator for Ships. L. W. McGuire, U. S. Navy.
69 An Efficient Rat-Killing Device for Use on Board Ship. F. M. Munson, U. S. Navy.

64. Insanity in the Navy.—In the Government Hospital for the Insane, Washington, D. C., are gathered together more than 2,900 mental and nervous bankrupts. During the period January 1, 1899, to June 1, 1910, Butts found that there were 634 admissions of insane men of the Navy and Marine Corps to this institution. Of this number, 34 have been readmissions and 72 have been retired officers, naval beneficiaries, and supernumeraries who could not properly be considered in the same statistical tables with those men who just prior to their admission into the hospital were performing active service in the Navy or Marine Corps. There remain then 528 cases of insanity from the active lists of the service during the period named which have on one or more occasions been admitted to the hospital. The conspicuous features of Butts' study are the large number of recoveries—49.24 per cent.—and the very small number of deaths—6.64 per cent. He found also that 67.24 per cent. of the insanity of the navy occurs in men under the age of 30.

Of the foreign-born, Ireland has furnished a conspicuously large number of insane men, while her average annual percentage of enlistments has been relatively small, the ratio being 7.95 per cent. insane men to 1.91 per cent. enlistments. Germany, on the other hand, has furnished a much larger average annual percentage of enlisted men than any other foreign country, and a relatively small percentage of those men have become insane—very much smaller than Ireland—the ratio being 2.65 per cent. insane men to 2.22 per cent. enlistments. The Government Hospital for the Insane was opened in 1855; from that date up to and including June 30, 1909, there have been admitted into the institution 5,865 foreign-born insane patients. Of this number 2,282 were born in Ireland and 1,614 were born in Germany. Only one insane Filipino, a musician, has thus far found his way into the hospital. Next in importance to alcohol, bad heredity and syphilis, heat or sunstroke, seems to have been the most frequent etiologic factors.

From his examination of the insane men of the Navy and Marine Corps now undergoing treatment at the Government Hospital for the Insane, and the case records of those who have been discharged from the hospital, Butts has been impressed with the great desirability of inquiring into the family and personal histories of candidates of enlistment before accepting them as recruits. He feels sure that if more care were exercised in this respect by recruiting officers that an immense amount of money could be saved the department, as well as extra work for other medical officers, and there would be great diminution in the number of admissions of insane men of the Navy into hospitals for their care.

67. Helminthologic Technic.—The essential steps of the methods employed by the U. S. Naval Medical School Laboratories in the collecting, killing, preserving, clearing, staining, mounting, and sectioning of flatworms, roundworms, and ova, respectively, are given by Garrison as follows:

Collecting: Wash in warm water, or, preferably, salt solution; in case of ova wash thoroughly by repeated sedimentations in water.

Killing: Flatworms.—Kill in following solution: Saturated aqueous solution of bichlorid of mercury, 70 per cent. alcohol, equal parts; mix and add 1 per cent. glacial acetic acid; use heated to about 70 C.; wash in running water; remove residue of bichlorid with iodin alcohol.

Roundworms.—Kill in 70 per cent. alcohol heated to about 80 C. Allow to cool.

Ova.—Kill as for roundworms, or add 5 per cent. formalin.

Preserving: Transfer to 70 per cent. alcohol—5 per cent. glycerin mixture. (Except formalized ova.)

Clearing Without Staining: Roundworms and Ova.—Clear on the slide with caustic-potash solution (30 per cent.) or with glycerin, or first with the caustic, followed by glycerin. Clear in bulk by allowing the alcohol to evaporate from a glycerin-alcohol mixture, leaving sufficient glycerin to cover the specimen.

Flatworms.—May be treated as for roundworms, but are usually stained (q. v.).

Mounting from Glycerin: Either mount directly in glycerin, ringing cover glass heavily with cement or balsam or (for more durable preparations) transfer to glycerin jelly, mount, and ring cover glass.

Staining and Mounting in Toto: Flatworms.—Flatten between two slides held by a rubber band and stain in carmine from one or two to twenty-four hours or longer. Remove from between slides and decolorize in alcohol or in acid alcohol, watching progress of decolorization under microscope. Replace between slides and pass through dehydrating alcohols to xylol and mount in balsam. (If aqueous carmin is used the specimen need not be compressed until after decolorization.)

Roundworms and Ova.—Little or nothing can be gained by attempting to stain ova or roundworms except when the latter are first sectioned.

Sections: Flatworms.—Usually stained in bulk before sectioning. Dehydrate, clear, and imbed in paraffin, carefully orienting the specimen. Cut sections thick.

Roundworms.—Sections seldom needed. Cut worm in pieces to allow fluid to penetrate from the ends. Impregnate thoroughly with a hard paraffin. Cut thick sections and stain on the slide in alcoholic carmin.

Wisconsin Medical Journal, Milwaukee

September

70 *The Wassermann Reaction in the Pathology, Diagnosis and Treatment of Syphilis. R. M. Pearce, New York.
71 The Wassermann Reaction. C. A. Baer, Milwaukee.
72 *Prophylactic Measures in Development of Insanity. A. W. Rogers, Oconomowoc, Wis.
73 Dermatitis of Unusual External Origin. O. H. Foerster, Milwaukee.

70, 72. Abstracted in THE JOURNAL, July 23, 1910, pp. 343 and 344.

Military Surgeon, Washington, D. C.

October

74 *Camps of Instruction for Militia Medical Officers in 1909. G. S. Crampton, National Guard Pennsylvania.
75 House Construction in the Tropics. H. H. Rutherford, U. S. Army.
76 Mathematics and Medicine. L. C. Duncan, U. S. Army.
77 The Red Cross First-Aid Corps. G. M. Blech, Chicago.
78 Infection of Southern Recruits with Intestinal Nematodes. A. G. Love, U. S. Army.
79 Venomous Snakes of the United States, Their Bites and Treatment. W. C. Lyon, U. S. Army.
80 Catatonic Dementia Præcox, and Its Economic Importance to the Naval Service and the Government. H. Butts, U. S. Navy.
81 *A Freezing Microtome. N. Roberts, Washington, D. C.
82 Variola Hemorrhagica. R. E. Ebersole, Washington, D. C.
83 Medical Conditions in Liberia. P. M. Ashburn, U. S. Army.
84 The Private Sanitary Filipino Scouts. E. L. Ruffner, U. S. Army.

74. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1683.

81. **Freezing Microtome.**—The apparatus described by Roberts is identical in principle with the ordinary carbon dioxid operated freezing microtome, except that the cold is applied by a slow current of brine at a minimum temperature of about 12 C. instead of by a rapid current of carbon dioxid gas at 30 C. or lower. In fact, with a few easily made alterations, the same instrument might be used for carbon dioxid and brine alternately. The brine is usually made by the interaction of fine ice and salt in a slightly elevated reservoir, and is run into and away from the microtome by rubber or metal tubing. The flow is regulated by a cock of some sort; a brass stop-cock mounted on the base of the instrument is best, but a simple screw-cock compressing the rubber tubing answers every purpose. To secure an even distribution of the cold, the brine, on entering the drum of the instrument, should first strike the center of the freezing plate and then radiate equally in all directions and be drained off below. This is brought about without difficulty by a suitable arrangement of entrance and exit tubes and a baffle plate. The advantages of this apparatus are said to be: simplicity, cheapness in the first cost and operation, wide availability (it can be used wherever ice and salt are to be had), and rapidity combined with great steadiness and regularity of operation, due to the high capacity for heat of the brine as compared with that of the gases used in other forms. Moreover, the brine can easily be prepared of any temperature desired down to —12 C., which is plenty low enough, and maintained at exactly the desired temperature. The freezing being under perfect control, much better sections can be cut than with carbon dioxid freezing, where the temperature and rate of flow of the freezing medium are subject to wide and only partially controllable variations.

American Journal of Physiology, Boston

October

85 Preparation and Properties of Thrombin. W. H. Howell, Baltimore.
86 Latency of Knee-Jerk Response in Man. C. D. Snyder, Baltimore.

Journal of the Medical Society of New Jersey, Orange

October

87 *Personal Experiences in Renal Surgery. G. N. J. Sommer, Trenton, N. J.
88 *Stomach Surgery. E. Staehlin, Newark.

87. **Renal Surgery.**—Briefly, Sommer's cases were as follows: Case 1.—Abdominal section and drainage for tumor in lower abdomen mistaken for mesenteric cyst. Second abdominal operation and removal of an ectopic kidney. Recovery. Case 2.—Acute septic infarction of the kidney; nephrectomy. Recovery. Case 2.—Acute infection in hydronephrosis; nephrectomy. Recovery. Case 4.—Chronic pyonephrosis; nephrectomy. Recovery. Case 5.—Hypernephroma; nephrectomy. Recovery from operation; death later from recurrence. Case 6.—Carcinoma; nephrectomy and appendectomy; operative recovery. Death from recurrence later. Case 7.—Stone in the pelvis of the kidney; pyelotomy. Recovery. Case 8.—Calculus in pelvis of the kidney; pyelotomy. Recovery. Case 9.—Calculus in hydronephrosis; nephrectomy. Recovery. Case 10.—Calculus pyonephrosis; nephrectomy. Recovery.

The skin preparation of these patients has been of two kinds, the first being the usual hot water and soap, alcohol and 1 to 1,000 solution of bichlorid; the second, the iodin method, which consisted in painting the operative area with an 8 per cent. solution of iodin crystals in 95 per cent. alcohol. This is applied twice just before operation and covered with a sterile dressing. Both methods have been satisfactory. The kidney has usually been exposed by an incision beginning at the outer border of the erector spinæ muscle, 2 c. m. below the last rib. It runs downward and forward parallel with the last rib toward the inner side of the anterior superior spine of the ilium. If necessary to secure room the incision is made to the outer border of the rectus. The perirenal fat is torn through or removed with the diseased organ when necessary, as in malignant disease or severe perinephritis.

In removal of the kidney the ureter is tied off as low down as possible with chronic catgut and the stump sterilized with carbolic acid and alcohol. The vessels are usually tied with silk. When the pelvis of the kidney has been opened the wound has usually been closed with plain catgut interrupted sutures and a cigarette drain placed down to the suture line. No leakage has been noted in cases in which this was done. In nephrectomy the wound has usually been drained with gauze or rubber tubes. The wound is closed with chromic catgut for the deep layer and interrupted silkworm gut sutures which are removed on the tenth day. The drain comes out on the third day and is not replaced. The patient is usually permitted to drink freely of water after the operation, and when the urinary secretion is deficient, spartein sulphate, 2 grains hypodermically, is given every 3 hours.

88. Abstracted in THE JOURNAL, Aug. 6, 1910, p. 527.

Medical Fortnightly, St. Louis

September 26

89 The Owen Bill for Establishment of a Federal Department of Health, and Its Opponents. S. A. Knopf, New York City.
90 Alterations in Stools as Indications for Change of Food in Infants. J. Zaborsky, St. Louis.
91 Stenography for Physicians and Nurses. A. L. Benedict, Buffalo, N. Y.

American Medicine, Burlington, Vt.

September

92 Treatment of Flat-Foot. R. E. Soule, New York City.
93 *Relation of Nasal Disease to Hay Fever and Asthma. C. G. Crane, Brooklyn, N. Y.
94 *Administration of the Public Health. D. E. Hoag, New York City.
95 *Friedreich's Ataxia in a Child Five and a Half Years of Age. M. Neustaedter, New York City.
96 The Medical Library and Its Influence on Medical Culture and Remuneration. B. Holmes, Chicago.
97 Rheumatism—Its Symptoms and Differential Diagnosis. S. V. Haas, New York.

93. **Relation of Nasal Disease to Hay Fever and Asthma.**—Crane reports five cases which he believes support his view that hay fever and asthma are reflex neuroses caused in many instances by nasal disease. Therefore treatment of the nasal condition is indicated.

94. **Administration of the Public Health.**—The establishment of bureaus of health is advocated by Hoag. He would have each bureau with its own building and its corps of physicians be the administrative health bureau for the particular neighborhood in which it was located. One or more experienced physicians would be in charge with a dozen or more assistants according to the needs of the locality. These would all be under municipal pay, as the whole system would be under the municipal control and supported from the city's funds.

The duties of the assistant municipal physicians would be to visit from time to time, daily or tri-weekly, every family within their district, attend cases of illness when needed, advise regarding sanitation and infection, and report cases of violation of law. Conditions and circumstances or cases of illness which they were incompetent to handle would be reported to their superior officers, whose duty it would then be to direct and take charge of them. A system of promotion according to time of service and ability would also be a part of the system. The admission into the ranks of the physicians attached to the Bureau of Public Health would be by competitive examination.

The whole system would be a valuable clinic for the physician before entering private practice, for he would get actual experience in visiting families in their homes which is never obtained either in the dispensary or the hospital. This would in nowise affect the private practitioner or his livelihood. There would always be a demand for the private physician by the better classes just as we have private tutors, although there is a public school system, or have private detective agencies as well as a public police system. The whole system would tend, Hong thinks, to elevate private practice rather than to do it harm. As an embellishment to a public health system such as this, it should be made a misdemeanor, he says, not to pay the private physician, since the municipality had provided a means by which medical attendance could be had by the poor without pay; just as the state at the present time assigns legal aid to the person without funds, so would the municipality honor the bill of a physician who had been imposed on by persons who if they had chosen could have obtained free medical services. The local public health bureaus could also appropriately maintain supervision over practitioners in general, so far as irregular practices and insanitary septic methods are concerned. Young physicians on graduating would elect whether they should wish to enter on private practice at once or enter the ranks of municipal health officers.

95. **Friedreich's Ataxia in a Child.**—A boy, aged 5½ years, family history negative as to tuberculosis, alcoholism or syphilis, born after normal labor, a breast-fed baby, was well nourished and robust up to the age of 3 years. At that time, vomiting without apparent cause at the rate of once in two or three months after drinking a cup of tea. Two and a half years ago his vomiting came on once every week, soon after rising in the morning, stomach being empty. After a few weeks the vomiting became more frequent, three times a week for two weeks, and then once every day, always in the morning soon after rising. This continued for six months, at the end of which time he was vomiting a few times a day. No medication could stop it. During these six months, the father noticed that his gait began to be slightly unsteady and that he could not run about as heretofore. During these six months he also complained of severe headache, then vomiting suddenly ceased and the headache left the patient when he was taken ill with fever which left him after three days, but he was unable to rise or walk without being supported, and that condition is present to-day. Six months after the onset of this fever he began to show an ataxia in the upper extremities which is fully developed to-day.

The musculature of the body is in a decidedly hypotonic state; patellar reflexes absent. Argyll-Robertson pupil present. The gait is that of typical tabes; speech is rather slow. Examination of the fundi of the eyes showed negative results. There is no nystagmus and hearing is normal. There is marked ataxia in the upper extremities; no disturbance of sensation, sphincters normal. The intelligence of the child is absolutely intact. Noguchi's modification of Wassermann's reaction of the blood is positive. The child is unable to walk or stand without being supported; deep muscular sense is gone; otherwise, he is doing very well.

Chicago Medical Recorder

September

98 Sterile Catgut. F. Kuhn, Kassel, Germany.
99 Management of the Sick-Room. G. F. Butler, Chicago.
100 Nose and Throat Disease a Contributory Cause of Pulmonary Tuberculosis. L. J. Lautenbach, Philadelphia.
101 Open Operative Treatment of Fractures of the Patella. A. P. Heineck, Chicago.

Archives of Ophthalmology, New York

September

102 Histologic Findings in a Case of Tuberculous Cyclitis, and a Theory as to the Origin of Tuberculous Scleritis and Keratitis. F. H. Verhoeff, Boston.
103 Glaucoma from Adhesion of the Lens Capsule to the Cornea. A. Knapp, New York City.
104 Optic-Nerve Diseases Due to Poisoning with Organic and Inorganic Arsenical Preparations. O. Schirmer, New York.
105 Implantation of a Metal Ball in Tenon's Capsule. W. M. Sweet, Philadelphia.
106 Tumor of the Adrenal Gland with Metastasis in the Orbit. A. Quackenboss, Boston.
107 Hemeralopia. C. Hess, Würzburg.
108 Blood-Vessels of the Cornea. A. Brueckner, Würzburg, Germany.
109 Pathology of Vitreous Fibrils. R. Greeff, Berlin, Germany.
110 Traumatic Affections of the Orbit. F. Cause, Würzburg, Germany.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

September

111 *Senile Epilepsy. E. D. Fisher, New York.
112 Autogenous Vaccines in Recurrent Abscess Formation. G. G. Ross, Philadelphia.
113 Ethology of Alcoholic Inebriety. L. D. Mason, Brooklyn, N. Y.
114 Preparatory Treatment of Surgical Patients. A. M. Crispin, New York City.

111. Abstracted in THE JOURNAL, May 28, 1910, p. 1811.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

September 24

1 Use and Abuse of Lime Salts in Health and Disease. J. Barr.
2 *A Curative Treatment of Cholera. L. Rogers.
3 Cholera. M. M. Basil.
4 *Diagnosis and Treatment of Syphilis. E. J. Feibes.
5 *Pityriasis Rubra Pilaris. J. G. Tomkinson.
6 Serodiagnosis of Syphilis. J. E. R. McDonagh.
7 Rice Diet in Acute Skin Diseases. L. D. Bulkley.
8 Treatment of Favus. J. F. H. Daly.
9 Varieties of Molluscum Contagiosum. P. S. Abraham.
10 Actinomycosis, with Special Reference to Treatment by Potassium Iodid. R. B. Wild.
11 Electrolysis for Hirsuties. W. Evans.
12 Pemphigus Vegetans. G. Pernet.
13 Investigation of a Dermatitis Among Flower-Pickers in the Scilly Islands, the So-Called "Lily Rash." D. Walsh.
14 Paleogenesis. J. Hutchinson.
15 Treatment of Skin Diseases by Vaccine Therapy. J. L. Bunch.
16 *Cutaneous Diphtheria. G. W. Dawson.
17 Solid Carbon Dioxid in Dermatology. E. R. Morton.
18 *Treatment of Roentgen-Ray Burns. A. Eddowes.
19 Human Trypanosomiasis. D. Bruce.
20 *Features of Tuberculosis in India. J. R. Roberts.
21 Leishmania Tropica or Oriental Sore in Cambay, India. R. Row.
22 "Tropical Broncho-Oidiosis." A. Castellani.
23 Special Factors Influencing the Suitability of Europeans for Life in the Tropics. R. H. Charles.
24 Serum Treatment of a Horse Suffering from Trypanosomiasis. A. Connal.
25 Lacto-Bacillin in the Treatment of Tropical Intestinal Ailments. J. Cantlie.
26 Phlebotomus or Sandfly Fever. C. Birt.

2. **Treatment of Cholera.**—Feeling convinced that a careful study of the changes in the blood would yield valuable indications for treatment, Rogers has carried out a long series of researches on these lines, especially during the past three years. The first result was the reduction of the death-rate to barely one-half by the use of hypertonic saline intravenous injections in the collapse stage, and blood-pressure-raising measures as a preventative of later uremia. From 1895 to 1905, the death-rate was 59 per cent. In 1906, when normal salines were used intravenously, it fell slightly to 51 per cent., but on these being given up once more in 1907, as of little use, it rose again to 59.5 per cent. The hypertonic solutions were commenced early in 1908, and during two years' observations the mortality among 294 cases was only 32.6 per cent., or but little more than one-half the previous rate, thus affording conclusive evidence of the great life-saving value of the new method. However, an effectual cure of cholera is most likely to result from some simple method of destroying or rendering harmless the toxins within the bowel itself, thus preventing their absorption in fatal doses. Rogers therefore set to work to find such an agent of a non-poisonous nature, and this agent he believes to be permanganate salts. The permanganates are given in two different ways. First, in solution, to drink *ad libitum* in the place of water. Beginning with from one-half to one grain to the

pint, on account of the unpleasant astringent taste, the strength is rapidly increased up to from 4 to 6 grains in 1 pint, or even stronger if the patient will swallow it. Fortunately, in severe cases the thirst is so great that no difficulty is usually experienced in pushing the drug in this way. Vomiting may occur, but does no harm. On the contrary, it probably helps to remove some toxin. Calcium permanganate is the best salt for this purpose, Rogers believes, being somewhat less astringent than the potassium salt, while as it is divalent it will exert a greater oxidizing action. The calcium element may also possibly lessen the effusion through the bowel wall. The other method of administration is in pill form, for which purpose the potassium salt is more easily dispensed on account of the hygroscopic properties of the calcium and sodium compounds. The simplest method is to mix two grains of potassium permanganate with a little kaolin powder and vaselin, and make as small a pill as possible. It is then coated so as to dissolve only on reaching the alkaline small intestine, where its action is wanted. It is important to see that the pills dissolve readily as they sometimes become hard and inefficient after being kept some time, and may then pass through the bowel unchanged. Rogers now gives one pill every quarter of an hour for the first two hours, and then every half-hour until the stools are colored green and become less copious, which usually occurs in about twelve hours. In mild cases they need only be given during alternate four-hour periods. Barley water may also be administered to maintain the strength, as it is not readily acted on by the permanganates. At the beginning of the second day eight more pills are given, and in severe cases this is repeated on the third day in order to avoid relapses, which have occurred in three cases. They all promptly yielded to a renewal of the permanganate treatment, however, thus furnishing an additional reason for believing its action to be directly curative. The internal administration of permanganates in cholera for the purpose of destroying the specific toxins within the alimentary tract was commenced by Rogers in August, 1909. By the end of the year 17 cases, including 10 severe attacks requiring transfusion, had been treated, with only 1 death.

4. **Diagnosis and Treatment of Syphilis.**—For a thorough mercurialization, Feibes is of the opinion that the method of "Schmierkur" (rubbings) is the most efficient; with no other treatment, he says, can we so thoroughly regulate the admission of mercury; we can stop it at a moment's notice, and easily prevent the discomforts and dangers of acute mercurial poisoning. If for any reason the "Schmierkur" is inapplicable, injections of calomel may be recommended as being of equal value; their disadvantages are the painfulness, the risk of abscesses, and their dangers in cases of idiosyncrasy. They are undoubtedly of great efficacy, especially as regards producing an effect quickly.

5. **Pityriasis Rubra Pilaris.**—Sixteen years ago, after commencing work as a lithographic stone polisher, the palms of the patient's hands became red and thickened. Recently, follicular papules appeared on the proximal phalanges of the fingers of both hands, later on the middle phalanges of the third and fourth fingers, and subsequently on the back of the hands, affecting in the main the skin over the first, second and fifth metacarpal bones. Later, the fronts of the wrists, the outer aspects of the forearms, and the backs of the elbows became affected. On examination, in addition to the lesions already mentioned, isolated follicular papules were seen on the lower abdomen. Large horny, dark gray follicular papules were conspicuous over the dorsal convexity of the spine, extending laterally. In the summit of the intergluteal fold—namely, over the sacrum—the papules were closely aggregated, presenting a somewhat verrucose appearance, and a similar condition was present over both ischial tuberosities. The knees were similarly but not so markedly affected, and there were some hyperkeratoses where the boot is laced. The soles were erythematous, the neighborhood of the heels was markedly hyperkeratotic, as was also the center of the right sole. The forehead was slightly erythematous, but no scaling was observed. The upper half of the bridge of the nose showed telangiectases. A few comedones were present on the face, and also on the back of the neck. The scalp was scaly but not markedly so. The affected areas of the hands, fingers, intergluteal fold, and ischial tuberosities were slightly but definitely erythematous, and there was a suspicion of erythema on the mid-dorsal region of the trunk. The erythema appeared to begin perifollicularly and spread laterally until neighboring specific centers of origin coalesced into one continued patch. The finger nails were longitudinally striated. The papules throughout are distinctly follicular and contain a central horny cone. According to the patient's story, the first evidence of the disease was on the palms after commencing work as a lithographic stone polisher. Tomkinson suggests that these clinical signs doubtless point to pressure as a determining or accessory agent in the development at least of some of the lesions in this and, perhaps, on closer observation, in other cases, but nothing more, otherwise pityriasis rubra pilaris could be by no means a rare affection. Doubtless the actual cause must be sought for internally.

16. **Cutaneous Diphtheria.**—Of the 10 recent cases Dawson has seen 4, and in 9 of them there was no membrane or other usual manifestation of diphtheria. All but 2 of these cases occurred in children; 4 of them ended fatally, 7 of them were of an impetiginous eczematous type, and in 3 of them there were vesicles and bullæ which gave rise to a profuse discharge. In 4 there was severe conjunctivitis, with copious serous and purulent discharge. The commonest and therefore most typical form occurs in children, and has the appearance of an impetiginous eczema, nearly always affecting the head and face, and associated with severe conjunctivitis, sometimes with otorrhea and rhinitis, the whole forming a clinical entity from which a diagnosis may be deducted with some degree of confidence.

18. **Treatment of Roentgen-Ray Burns.**—The chief object of Eddowes' paper is to call attention to an operation which he has introduced for the relief of bad cases in which painful ulceration has occurred and proved rebellious to ordinary treatment. Slight cases can be easily managed by the application of fomentations, lotions, and pastes of various kinds, and Unna's zinc-gelatin. For some of the chronic cases, particularly those commonly involving the backs of the hands in *x*-ray workers, he has found few remedies to equal compound tincture of benzoin. In severe cases in which there is pain, rigidity and ulceration, it sometimes happens that the ulcers heal but slowly, if they heal at all; and, if healed, easily break down again. In these cases Eddowes resorts to nerve section. He says that not only do incisions relieve pain and tension, and cure the ulcers, but they also, by bringing in extra new tissue, increase the mobility of the parts.

20. **Tuberculosis in India.**—Roberts attempts to show that tuberculosis manifests itself in India rather differently than in Europe, not at all in the tuberculosis lesions of organs but in the beginning of the disease, and that it adds another prolonged fever to the many fevers encountered in that country. There are three forms in which early tuberculosis shows itself. They differ, curiously enough, and for some unexplainable reason, from the early signs seen here in Europe: (1) An acute febrile form resembling a typical typhoid, which Roberts calls "acute tuberculous fever," and encountered principally in young adults; (2) an irregular fever with enlargement of the cervical glands, the carotid chain, and those under the jaw, and seen principally among children; (3) a debility associated with dyspepsia and constipation, resembling tropical debility. Even here the thermometer shows afternoon or evening rises to about 100 F., very easily overlooked.

Lancet, London

September 24

27 Etiology and Treatment of Rheumatoid Arthritis. P. W. Latham.
28 *Clinical Surgery in Japan. Y. Takaki.
29 Uterine Prolapse. J. B. Hellier.
30 Bilateral Papilledema and Ring Scotoma Due to Sphenoidal Sinusitis. C. G. R. Wood and G. F. C. Wallis.
31 Microscopic Diagnosis of Tumors at Time of Operation. E. H. Shaw.
32 *Pneumonia. W. E. McKechnie.
33 *Radical Cure of Hemorrhoids. J. O'Conor.
34 Malignant Diphtheria with Multiple Lesions in an Infant J. D. Rolleston.

35 A Visit to Professor Treupel's Clinic; the Use of "606." J. G. Garson.
36 The Wandering Womb and Fumigation. D. McKenzie.
37 Motoring Notes. C. T. W. Hirsch.

28. **Clinical Surgery in Japan.**—The number of patients operated on by Takaki for hemorrhoids by the Whitehead method is 176—124 males and 52 females. They were all treated by the same method and completely cured, except in 7 cases—3 cases of stricture, 2 cases of ulcer on the mucous membrane, 1 case of paralysis of the sphincter, and 1 case of pulmonary embolism. Of 3 cases with stricture 2 were patients in the Charity Hospital. They left the hospital a few days after operation and did not return to the hospital for some time. So the stricture was due to the early discharge and their carelessness. The other case was due to the early opening of the bowels before the wound had had time to unite properly. Two cases of ulcer were due to leaving the mucous membrane too long, so that after the wound healed a portion of mucous membrane appeared outside the anus and the ulcer was formed by the rubbing of the trousers. This could have been prevented by removing the mucous membrane at the time of operation. One patient complained of the inability to retain the feces, especially when suffering from diarrhea. This patient had had prolapse of the rectum for 8 years and even before the operation he was unable to retain the feces. So Takaki does not consider this patient to have been paralyzed by the operation. Three of these operations were done under local anesthesia. Of course, it was more difficult owing to the rigidity of the sphincter, but it can be done without much pain. In one case of prolapse it was fairly easy.

Takaki treated 7 cases of carcinoma with thymus gland. For making the powder he used the fresh calf's thymus gland. It was dried under low temperature and ground into powder. It was given by the mouth and the doses were from 0.01 to 0.05 gram twice a day between meals. After a few trials it was Takaki's habit to give sodium sulphate combined with it. He says that it is wonderful how the pain disappears. The thymus powder seems to have some power of disintegrating the tissues of the malignant tumor by suppuration or necrotic changes. The size of the tumor was in one case diminished, and in two cases became smaller by disintegration. It seemed to retard the growth of the tumor. It has more effect on carcinoma than on sarcoma. Indigestion is liable to occur.

32. **Pneumonia.**—It is McKechnie's practice to give morphin in the early stages of pneumonia if there is pain preventing sleep, or if there is much restlessness, or if the amplitude of the respiration appears to be sufficiently diminished to cause an accumulation of carbon dioxid. The diminution in amplitude of respiration is no doubt a protective process which gives rest to the inflamed lung. On the one hand, he says, we have the diseased lung for which rest and repair is the best thing; on the other hand, we have the patient, the owner of the lung, to whom a certain continued respiratory activity is essential. The physician must try to hold a judicious balance between these more or less temporarily conflicting interests, always remembering that he must ease the amount of physiologic work the lungs have to do as much as possible, and at the same time enable the patient to live over the crisis. The first dose of morphin McKechnie gives is usually 0.008 gm., and, he says, one seldom needs to give more than 0.016 gm. He invariably gives morphin hypodermically; as he considers this to be the only sound and safe way, as the effect of the dose becomes apparent in a few minutes and there is no danger of unabsorbed doses causing unexpected poisoning.

During the last ten years he has given morphin to between 200 and 300 adults suffering with acute lobar pneumonia, usually giving it during the first three days of the attack, most frequently on the evening of the first or second day. Out of all these cases he can not recollect a single instance in which there appeared to be any harmful effect. On the contrary, the benefits have usually been marked. The breathing becomes easier, the pain is relieved, the circulation improved, and the patient gets some of that rest and sleep which is such an important element in conserving the energy and in diminishing the manufacture of carbon dioxid. The use of ice, hot compresses, poultices, etc., may be dispensed with, and the patient need no longer battle with a gigantic poultice on his already overtaxed and overheated chest; morphin relieves the pain and gives sleep far more efficiently. McKechnie's experience causes him to doubt the soundness of those warnings against the use of morphin which are indulged in at present. It seems to him probable that the fear of using morphin has been based on some unfortunate results, possibly really unconnected with its administration, perhaps due to its employment in an injudicious way, as, for instance, by oral administration.

33. **Radical Cure of Hemorrhoids.**—After proper preparation for the operation, about one minute is spent in placing four of Lane's artery forceps to the four cardinal points of the anal circle; these, irrespective of rugosities, are applied exactly at the junction of the mucous membrane and the skin. The forceps, say, on the north and east are seized, the intervening portion is rendered taut, and with a good scissors the mucodermal line is rapidly divided; the same process is repeated with the remaining three segments, and thus the circular discission is effected. The depth of this primary cut includes skin and some subcutaneous tissue. In the next stage the left index finger is introduced into the anal canal to act as a guide, and the tissues are snipped carefully with scissors right round and straight down to the submucosa; as the external sphincter comes into view it is pushed upward with a blunt dissector. This process of defining the submucosa and pushing the sphincter up out of harm's way must be carried out thoroughly all round, and on no account must any advance be made until the adit level is struck—the submucous coat. During this process of freeing the mucous cuff it is necessary to apply six or eight pressure forceps to the cut edge of the mucous membrane for traction purposes; the latter, by the way, must be done gently, for the forceps are liable to slip off or tear their way out. The cuff having been freed up to the transverse fold of the mucous membrane which indicates the site of the internal sphincter, a vertical slit is made in the former up to this point, and immediately the apex is sutured to the skin, a series of small transverse snips are then made through it at this level, and sutures applied. If any vessel spurts it is seized and ligated. When concluded the area of sutured circle ought not to exceed the size of a half dollar, unless there has been considerable previous prolapse. A morphin suppository is inserted, the part is thoroughly cleaned and dried, and a dry gauze sponge is applied and is kept in position by a pad of wool and a T-bandage. On the third evening 5 grains of calomel are given, followed by a tablespoonful of oil on the fourth morning. As often as the bowels act the dresser cleanses and dries the part, and reapplies dry gauze dressing. On the tenth day the patient is allowed out of bed and is discharged a few days later with a pot of carbolized petroleum, which he is instructed to apply into the rectum three times a week for a month.

38. This number is devoted exclusively to educational matters.

Medical Press and Circular, London

September 14

38 Educational Number.

September 21

39 Prognosis in Phthisis Pulmonalis. T. D. Lister.
40 Effect of Foodstuffs in Prevention of Dental Caries. J. S. Wallace.
41 Luxuries as Remedies in Cardiac Diseases. M. Herz.
42 Iodoform and Thyroidism. A. R. Short.

42. **Iodoform and Thyroidism.**—A middle-aged woman was treated for a carbuncle in the perineum, which was dressed by a medical practitioner and a nurse with very ordinary quantities of iodoform. During three weeks, about half an ounce of the powder was dusted on, and altogether about 40 inches of narrow iodoform gauze packing were used. The carbuncle healed well under this dressing. For weeks after the cessation of treatment she continually complained that she could smell and taste iodoform, though there was in reality none in the house. She went to the South of England to recoup her strength three or four weeks later, and stayed ten days. On her return she was noticeably ill; there was great emaciation, she was nearly 28 pounds below her normal

weight, the pulse was always 120 or more, the thyroid was moderately enlarged, tremor was marked, and she was exceedingly nervous and restless. Short considered it a case of exophthalmic goiter. The onset of the present illness was in January, 1909. There has been very slow but decided improvement, and now, April 1910, she is almost well, but has to lead a very quiet life.

Short connects this case with the use of iodoform because the trouble followed soon after the application of the drug, although it was not diagnosed for about a month. She undoubtedly suffered from iodoform poisoning, because the smell haunted her long after the drug was omitted. Iodoform is proved to cause hyperthyroidism of the acute type, and it is therefore reasonable to suppose that in a susceptible person chronic thyroidism might be produced. Iodoform should be used sparingly on absorbing surfaces, especially in adults. It should be avoided if there is any reason to suspect a tendency to exophthalmic goiter. The treatment of early cases of parenchymatous goiter should be directed to altering the drinking water and to introducing iodin. It would appear, since iodoform causes thyroidism more readily than iodids, that iodin ought to be given to such patients in organic combination. In the treatment of exophthalmic goiter, iodin starvation should be worth a trial. This could be effected by a meat diet.

Clinical Journal, London

September 14

43 Pneumonia. J. Broadbent, and others.

September 21

44 Rectal Fistula. F. C. Wallis.
45 Early Diagnosis of Subacute Combined Degeneration of the Spinal Cord. E. F. Buzzard.
46 Diagnosis and Differential Diagnosis of the Pathologic Processes Causing Enlargement of the Kidney. C. G. Cumston, Boston.

Indian Medical Gazette, Calcutta

September

47 *Ipecacuanha Treatment of Acute Hepatitis. H. W. Pilgrim.
48 Id.—F. J. Drury.
49 Id.—J. T. Calvert.
50 Id.—A. H. Nott.
51 Effect of Ipecacuanha on the Leukocyte Curve in Amebic Hepatitis. E. D. W. Greig.
52 Report for 1909 of Medical College Hospital, Calcutta. F. J. Drury.

47. **Ipecacuanha Treatment of Acute Hepatitis.**—The treatment of the acute hepatitis preceeding the formation of liver abscess is described by Pilgrim as follows: When not associated with loose stools and the bowels are inclined to be costive, a mild mercurial purge is first given; otherwise the ipecacuanha treatment is begun on the evening of admission or diagnosis of the disease. It is necessary that the patient should have nothing to eat or drink for at least two hours before or after the giving of ipecacuanha. Twenty minutes before taking the ipecacuanha, Pilgrim gives 20 grains of chloral, and then in average cases he gives 25 grains of ipecacuanha. In severe cases in which the full influence of the drug is immediately required, he gives 30 grains for the first 3 or 4 nights, after that reducing it to 25 and 20 grains gradually. He has occasionally given 40 grains, but he believes that this is seldom necessary, and the cases treated by him have responded very favorably to 30-grain doses and less. As a rule he finds one dose daily suffices, but in severe cases he does not hesitate to give it night and morning, and also in cases not apparently severe, but in which the leukocytosis does not rapidly reduce. The ipecacuanha is given in keratine capsules, 5 grains in each; given in capsules both the nausea and vomiting are greatly reduced. Many patients do not vomit at all, but only suffer for a short time from nausea, while some few are absolutely free from any unpleasant or abnormal sensation; it is all a question of whether the capsule breaks or comes undone before it has passed through the pylorus. After swallowing the ipecac, the patient is enjoined to lie absolutely still in bed, when under the influence of chloral, he usually soon drops to sleep, and if he wakes up 2 or 3 hours later, feeling uncomfortable, the drug will at all events have largely exerted its influence. Pilgrim thinks it a mistake to put on mustard plasters or other local applications to the stomach, which only attract attention to that organ and interfere with the drowsy feeling which begins to steal over the patient ending soon in sleep. The daily dose of ipecac. is continued till the leukocytosis falls to 10,000 or less, and the temperature has become normal, and the pain or discomfort in the region of the liver has gone, this latter being among the first symptoms that disappear under this treatment. Then the ipecac. is continued for another week in daily doses of 20 grains, for by this time even in cases in which the drug has proved obnoxious, toleration is usually established, and the patient seeing the result obtained is seldom refractory. Other important accessories, such as diet and rest are very carefully arranged for. At the end of about two weeks such patients are allowed up, and after a few days are sent away cured for a change, and urgently advised never to touch alcohol in any form, no matter how moderately, so long as they have to reside in India.

Annales de Médecine et Chirurgie Infantiles, Paris

September 1, XIV, No. 17, pp. 521-548

53 Case of Epidemic Poliomyelitis Commencing with Meningitis. (Réaction méningée intense au début d'un cas de paralysie spinale infantile.) P. H. Haushalter.
54 *Diabetes in Children. P. Maurel.
55 *Radiotherapy of Suppurating and Fistulous Glands. F. Barjon.

54. **Diabetes in Children.**—Maurel found that the diabetes in his child patients generally assumed the form of the severe pancreatic diabetes of adults. He thinks that children will be found to have diabetes much more commonly than is generally supposed if it is sought for more systematically. The disease usually develops insidiously until the rapid falling off in weight, the polydipsia and polyuria attract attention. Arrived at this stage, the disease runs a rapidly fatal course as a rule; the younger the child the more rapid the course. Infants with this disease should be given a teaspoonful of Vichy water with each meal; older children should be dieted like adult diabetics—measuring the amount of urine every day and weighing the child every three or four days, limiting him to milk in case of accidents, in other respects following the principles of treatment of adults, with possibly a course of saline and arsenical mineral waters.

55. **Radiotherapy of Glandular Lesions.**—Barjon found that radiotherapy gave good results in treatment of inflammatory glandular lesions, and he has recently been applying it in suppurative processes in glands and their complications, and the results have surpassed his anticipations. He describes his experiences with 56 patients. With closed lesions a minute puncture followed by radiotherapy gave perfect cosmetic results. Radiotherapy is most effectual, he states, after the suppuration has ceased under the influence of repeated punctures. If the suppurative process has opened a way outward the cosmetic results naturally are not so good, but even then they surpass those obtained by other measures. In one case suppurating glands in the inguinal region had been removed some time before but the wounds had not healed and they suppurated anew, until there were six large ulcerations extending down on the thigh and around on the buttocks and showing no tendency to heal. Four days after the first application of radiotherapy a turn for the better was apparent, and after the sixth sitting, in as many weeks, healing was complete, the new skin being thin and supple.

Presse Médicale, Paris

September 7, XVIII, No. 72, pp. 673-680

56 Intra-Intestinal Hemorrhage after Wounds of the Intestine. M. Guibé.

September 10, No. 73, pp. 681-688

57 *Prophylaxis of Compressed-Air Disease. (Réglementation du travail dans l'air comprimé.) J. P. Langlois.
58 "Staff" for Use in Orthopedic Appliances. (De l'emploi du staff en orthopédie pour le moulage des crêtes et des aspérités du squelette.) L. Mencière.

September 14, No. 74, pp. 689-696

59 Mechanism of Cammidge Reaction. (A quoi est due la réaction de Cammidge?) L. Grimbert and R. Bernier.
60 *Absence of Pause between Expiration and Inspiration. (La respiration continue.) R. Pla y Armengol.

57. **Prophylaxis of Compressed-Air Disease.**—Langlois discusses the bases for international regulation, remarking that the French law may serve as a model. One of the provisions

of this law insists on safeguards for workmen coming out of the compressed-air chamber so that if they should become dizzy there is no chance for a dangerous fall. The public authorities also post in the pay office a placard warning the workmen that it is imprudent to stay for more than 8 out of the 24 hours in air at a pressure of 2 kg. (8.8 pounds); 7 hours, of 2.5; 6 hours, of 3; 5 hours, of 3 or 3.5, and 4 hours, of 3.5 and 4. The law further insists on ventilation to insure that the proportion of carbon dioxid does not surpass 1 per thousand.

60. **Continuous Respiration.**—Pla y Armengol has encountered this peculiarity of the respiration only in patients with tuberculous infiltration of the lungs during the first stage of infection. There is no pause between expiration and inspiration; they follow close on each other so that respiration is continuous.

Semaine Médicale, Paris

September 21, XXX, No. 38, pp. 445-456

61 **Metamorphosis of Neoplasms.** F. de Quervain.
62 **Pseudocongestion of the Lungs from Pushing Up of the Diaphragm from Below.** M. Roch and G. Pulpius.
63 **The Present Status of Stroganoff's Prophylactic Method of Treating Eclampsia.** R. de Bovis.

Archiv für klinische Chirurgie, Berlin

XCIII, No. 1, pp. 1-291. Last indexed October 8, p. 1328

64 **Treatment of Diffuse Peritonitis.** J. Rotter
65 **Behavior of Striated Muscle after Myoplastic Operations.** (Verhalten quergestreifter Musculatur nach myoplastischen Operation.) A. v. Mutach.
66 *Treatment of Tuberculous Coxitis. G. Neuber.
67 **Experimental and Clinical Experiences with Plastic Operations on the Dura.** (Duraplastik.) G. F. v. Saar.
68 *Ileocecal Tuberculosis. M. M. Eschenbach.
69 *Puncture of the Brain for Diagnosis and Treatment. (Beitrag zur diagnostischen und therapeutischen Hirnpunction nach Neisser-Pollack.) F. Hesse.
70 **Persistence of the Thymus with Exophthalmic Goiter.** (Zur Frage der Thymuspersistenz bei Morbus Basedowii.) H. Gebele.
71 **Fate of Living Bones Transplanted into Soft Parts.** (Schicksal lebender Knochen, die in Weichtheile transplantirt worden sind.) W. Pokotilo.
72 *Collective Inquiry in Regard to Spinal Anesthesia during 1909. (Sammelforschung über die Lumbalanästhesia im Jahre 1909.) F. Hohmeier and F. König.
73 **Peritonitis from Perforation of the Gall-Bladder.** (Experimentelle Untersuchung zur Gallenblasenperforationsperitonitis.) W. Noetzel.
74 **Permanent Success of Experimental Plastic Operations on Bones.** (Dauererfolge der Osteoplastik im Thierversuch.) P. Frangenheim.
75 **Experimental Suture of the Aorta.** (Experimenteller Beitrag zur Aortennaht.) N. Guleke.
76 **Experimental Study of Action of Trypsin on the Vessels.** (Beitrag zur Wirkung des Trypsins auf die Gefässe.) F. Rosenbach, Jr.
77 **Apparatus for General Anesthesia with Differential Pressure.** (Apparat zur Ueberdrucknarkose.) F. Lotsch.

66. **Treatment of Tuberculous Hip-Joint Disease.**—Neuber advocates earlier application of operative measures, before extensive caries has developed and in all cases when caries is under way if the general health permits and severe lesions of internal organs are not evident. He gives an illustrated description of the technic which he has found gives best results in his experience at Kiel. The ultimate favorable position of the joint depends mostly on the energy, perseverance and care of the patient, himself, after the operation, and Neuber keeps him under supervision for several years to encourage and influence him in this direction. Neuber seeks to avoid the use of complicated walking apparatus as it prevents the functional strengthening of the muscles which is such an important factor in the final outcome. He incises from the front, severing the sartorius and rectus femoris, which permits ample access to the joint and inguinal glands and revision of the wound without moving the patient. The final result is that the patient can sit comfortably, move his limb actively sideways, bend it and twist it a little; the shortening is counteracted by the dropping of the pelvis. The gait with a cane is approximately normal; without it there is a slight limp.

68. **Ileocecal Tuberculosis.**—The great difficulty in treatment is that the affection is not differentiated until so late that extensive operations are necessary. Eschenbach has had 27 cases in his service, it being thus shown to be the most frequent of all tuberculous abdominal affections with the exception of peritonitis. Fourteen of the patients survived the operation and the first few months afterward, and with the exception of a tendency to hernia in a few the 11 patients recently examined were free from all disturbances. In 4 cases 3 and 4 years have elapsed since and the patients are in the best of health although the operation was very extensive.

69. **Puncture of the Brain and Lumbar Puncture for Intracranial Hemorrhage.**—In the case reported by Hesse the patient was still unconscious two hours after a fall on the head; breathing was stertorous, pulse 64, and a small hematoma was evident in the right orbit and temple. Within the next half hour the pulse dropped to 48 and the patient seemed moribund. A Neisser-Pollack puncture was then made back of the right Krönlein point and 8 or 10 c.c. of black blood released. The breathing ceased to be stertorous at once and the pulse increased to 68; the condition improved rapidly to such an extent that osteoplastic trephining became possible; 35 c.c. of blood were evacuated from the hematoma, and recovery was soon complete. Punctures in another case revealed multiple hematomas, the patient improving wonderfully while 70 c.c. of fluid was being evacuated from the right posterior Krönlein point, opening his eyes and asking questions during the operation. This was the third puncture.

72. **The Balance Sheet to Date of Spinal Anesthesia.**—Hohmeier and König have examined the records of 2,400 cases in which spinal anesthesia was applied in 41 well-known institutions, and they state that the idea that this is a harmless procedure will have to be abandoned. There are 12 fatalities for which it seems to have been directly responsible. The list includes 4 cases of death from paralysis of the respiration center; in 7 of the fatal cases the patients were over 70, but one patient was only 32. In rather a large proportion of cases the patients years after seem to suffer to an unusual extent from paresthesias, neuralgia, weakness, headache or vertigo, suggesting possibly a tardy effect of the spinal anesthesia. They urge physicians and surgeons to re-examine now anew patients to whom the spinal anesthesia technic was applied at any time. This may reveal an unexpectedly large number of cases of late injuries of the central nervous system from the spinal anesthesia years before. Their conclusions are that the method should be reserved for the exceptional cases.

Berliner klinische Wochenschrift

September 12, XLVII, No. 37, pp. 1693-1732

78 *Theory to Explain Beneficial Action of Oatmeal in Diabetes. (Zur Theorie der Hafermehlkur beim Diabetes.) M. Klotz.
79 **Ehrlich's "606" in Syphilis.** (110 Fälle von Syphilis, behandelt nach Ehrlich-Hata.) L. Michaelis.
80 **Technic for Injection of Ehrlich's "606."** (Eine bequeme, schmerzlose Methode der Ehrlich-Hata-Injektion.) E. Kromayer.
81 **Arrow Poison in East Africa.** (Das Pfeilgift der Watindigas.) M. Krause.
82 **Fracture of Twelfth Rib with Severe Neuralgia of Its Nerve.** (Rippenbruch mit Intercostalneuralgie.) A. Most.
83 **Severe Chronic Spasm of the Colon.** (Ein eigenartiges Symptomenbild der Hysterie.) R. Schütz.
84 **Case of Huge Sarcoma of the Pleura with Calcification, Secondary to Sarcoma of the Tibia.** F. Grabow. Commenced in No. 35.
85 *Early Symptoms and Serotherapy of Tetanus. K. Evler. Commenced in No. 35.
86 **The Problems and Achievements of Recent Research in Zoology.** O. Kuttner.

78. **Explanation of Action of Oatmeal in Diabetes.**—Klotz has found, he states, that wheat flour becomes transformed to sugar and the transformation stops there, while oatmeal is transformed a step further and is assimilated as an aglycogenic, anhepatic carbohydrate, and has thus an antiacetonuric action.

85. **Early Symptoms of Tetanus.**—Evler bases his study of the early symptoms of tetanus and the effects of serotherapy on thirteen cases, one in his own person. The feature of the early symptoms, he states, is that they appear transiently and are slight at first. Sometimes there are only traces of symptoms which the patient does not think of connecting with his often slight and rapidly healing lesion. A day or so after the infection there may be restlessness, sleeplessness, distressing dreams, difficulty in urination and more frequent impulses, oppression in the chest, violent headache, drawn features,

nosebleed, sweating, fatigue, excessive yawning, vertigo, darting pains at various points and chilliness. Sometimes the local disturbances are more prominent; swelling of the injured limb, notwithstanding the limb is raised, is suspicious of tetanus; it feels hot but is not red, and the local arterial pressure is unduly high. There may be occasional local pains and in a day or so the lymph cords show red and the region is very tender. Single groups of muscles may be tonically contracted and cannot be voluntarily relaxed; the contraction at first causes no pain but merely hinders moving the limb a little. Contracture and tremor may be observed in the injured limb, sometimes clonic twitching, but they are not painful and do not attract the patient's attention; more and more muscles gradually become involved and fibrillary movements may be evident at times. If the wound is on the hand, on grasping the forearm twitchings in the different flexor tendons may be felt, and the fingers tremble and twitch. One of the first signs, the third day, is a persisting pain after the involuntary contractions of the muscles induced by effort; nothing is to be seen at the spot at first but later the muscles contract to form a painful lump which disappears after a time but returns anew if the part is touched again. The lymph glands were swollen in several of his cases, the inguinal glands in some resembling the findings with syphilis. In one case the ulnar gland was so swollen and painful that it was excised under local anesthesia. Vertigo is an especially important early sign; it is often so severe that this is what first brings the patient to the physician. Ocular symptoms are also important, and there may be a spasmodic cough. The pulse is generally tense, slow and full. The hearing at first may be unusually acute but later there is more or less deafness. Speech is slow, probably from disturbances in the cortex and tongue. The benefits of serotherapy are apparent from the detailed history of his patients and of his own case. He was infected in operating on one of the patients and early symptoms developed within 24 hours, but he continued his practice for 9 days notwithstanding he presented nearly all the symptoms enumerated above. Serotherapy was commenced on the fifth day. Nutrient enemas became necessary on the seventeenth and the following day but by the nineteenth day the teeth could be opened a little and recovery then progressed although insomnia and headache persisted for some time and the gait was stumbling for weeks. Chilliness and occasional sharp pains were noted for months with muscular twitchings. Two of the 12 patients died. In one of the fatal cases no portal of entry for the germs could be discovered.

Correspondenz-Blatt für Schweizer Aerzte, Basel

September 10, XL, No. 26, pp. 817-848

87 Case of Neuroparalytic Keratitis. A. Dutoit.

September 20, No. 27, pp. 848-880

88 *Public Hygiene and Infectious Diseases. W. Kolle.

88. Public Hygiene and Infectious Diseases.—Kolle's historical and critical review of this subject concludes with the remark that the infectious diseases have nothing to do with the evolution of the species by survival of the fittest, as those best equipped for the struggle for existence, both physically and mentally, are the very ones who are carried off by the infectious diseases. The aim should be, he reiterates, to impress on every citizen, high and low alike, the duty of being healthy as a patriotic duty he owes his country. Prophylactic hygiene, he added, is not merely an index of the degree of external civilization to which a state has attained, it is also an index of the internal culture, and nothing can compare with it as a factor for culture in general. He delivered the address at the recent dedication of the Institute for Infectious Diseases at Berne.

Deutsche medizinische Wochenschrift, Berlin

September 15, XXXVI, No. 37, pp. 1689-1736

89 *Cosmetic Medicine and Surgery. (Ueber Kosmetik.) H. Paschkis.
90 Reinjections of Ehrlich's "606" in Syphilis. (Reinjektionen von Dioxy-diamidoarsenobenzol.) Wechselmann.
91 Ehrlich's "606" in Syphilitic Eye Disease. (Arsenobenzol gegen syphilitische Augenleiden.) E. v. Grosz.
92 Mercury Atoxyiate in Syphilis. (Ueber die angebliche Brauchbarkeit des atoxylsauren Quecksilbers zur Behandlung der menschlichen Syphilis.) R. Bergrath.
93 Influence of the Depressor Nerve on the Work of the Heart and Elasticity of the Aorta. (Einfluss des Depressors auf die Herzarbeit und Aortenelastizität.) O. Bruns and J. Gemmer.
94 *Differential Diagnosis between Multiple Sclerosis and Compression of the Spinal Cord. M. Nonne.
95 Diagnosis and Treatment of Duodenal Ulcer. F. Mendel.
96 Congenital Deformity of the Vertebræ as Cause of Curvature of the Spine. (Ueber angeborene Wirbelanomalien als Ursache von Rückgratsverkrümmungen.) G. Joachimsthal.
97 Etiology of Goiter. (Zur Frage der Kropfätiologie.) E. Bircher.
98 Foreign Bodies in the Esophagus. (Fremdkörper in der Speiseröhre.) L. W. Pernice.
99 Leprosy. P. H. Gerber.
100 The Wassermann Test Not Yet Adapted for Office Work. (Die Wassermannsche Reaktion in der Sprechstunde.) L. Münz.
101 *Text of Application for Patent on Ehrlich's "606."

89. Cosmetics.—Paschkis urges physicians to pay greater attention to the correction of minor disfigurements and advising patients how to attain the aspect of well-groomed health. He states that he was the first, years ago, to urge physicians to study this branch of medicine from the scientific and active standpoint instead of leaving it to manicurists, masseurs, hairdressers and quacks. Much of this belongs to the dermatologist and internist, and for practitioners to treat the whole subject of "beauty doctoring" as beneath their dignity he regards as a great mistake for a number of reasons.

94. Differential Diagnosis of Multiple Sclerosis and Compression of the Spinal Cord.—Nonne gives the details of six cases to show that it is sometimes impossible to differentiate these conditions during life. One of his cases was remarkable in that the supposed tumor compressing the spinal cord was not found at the exploratory laminectomy which, however, was followed by subsidence of all the symptoms and during the five years since the young man, a gärdener, has been in good health. The atypical forms of multiple sclerosis, and the atypical course of tumors compressing the cord explain the difficulties encountered.

101. An editorial on this subject appeared in THE JOURNAL, October 1, page 1204.

Fortschritte der Medizin, Leipsic

September 1, XXVIII, No. 35, pp. 1089-1120

102 Changes in the Upper Air Passages during Pregnancy and the Puerperium. (Veränderungen der oberen Luftwege in Schwangerschaft, Geburt und Wochenbett.) R. Imhofer.
103 Tuberculosis in Shop Clerks. (Tuberkulose bei Handlungsgehilfen.) G. Zickgraf.

Medizinische Klinik, Berlin

September 18, VI, No. 38, pp. 1471-1518

104 *Attack of Gout in the Eye. (Ueber okuläre Gichtanfälle.) E. Krückmann.
105 *Retention of Bromin after Administration of Bromids and the Influence on it of Intake of Salt. A. Ellinger and Y. Kotake.
106 *Local Immunization of the Portals of Entry for Infection. (Lokale Immunisierung der Eingangspforten von Infektionen.) H. Lippmann.
107 Autolysis and Metabolism. (Autolyse und Stoffwechsel.) E. Laqueur.
108 Psychic Disturbances of Korsakow Type after Attempted Strangling. (Psychische Störungen nach Strangulation.) E. Meyer.
109 Rare Complications of Cholelithiasis. O. Samter.
110 Pulsating Varices with Tricuspid Insufficiency. G. Joachim.
111 Effects of Passive Congestion of the Heart. (Ueber das Stauungsherz.) M. Lissauer.
112 Polycythemia and Softening of the Brain. (Polyzythaemie und Hirnerweichung.) K. Goldstein.
113 *Recurrence of Carcinoma of the Uterus after the Fifth Year. (Spätrezidive des Uteruskarzinoms.) M. Semon.
114 Acute Lymphemia. W. Carl.
115 Question Blank Symposium on Ehrlich's "606." Commenced in No. 37.
116 Forensic Importance of Hemochromogen and its Crystals. G. Puppe and W. Kürbitz.
117 Artificial Production of Vocal Sounds. (Ueber künstliche Erzeugung von Sprachlauten.) O. Weiss.

104. Gout in the Eyes.—Krückmann states that he has encountered six cases in which attacks of gout occurred in the eyes. The acute pain came on suddenly during the night; the conjunctiva and eyelids became swollen, red and angry with extremely severe sharp pain, aggravated by the slightest touch or movement of the head. In some cases the disproportion was striking between the insignificant changes in the interior of the eye and the intensity of the external symptoms. Notwithstanding the stormy onset, the whole attack passes over, leaving scarcely a trace; even functional disturbances are rare afterward. Opacity of the vitreous body occurs and persists only when there are pre-existing

changes in the eye and the gout attack is particularly severe. In the first three of his cases the attack in a single eye was the first manifestation of the constitutional gout, and its true nature was not confirmed by other manifestations of the gout until several months later when a typical attack in the great toe cleared up the diagnosis. One such patient still has an occasional attack of gout but the eyes have never been affected since. The prompt improvement under colchicum is another argument in favor of the gouty nature of the attacks in all the cases. It is possible, he remarks, that many forms of headache are due to an attack of gout involving the dura mater just as the sclerotic was involved in his cases. In one of his patients the attack developed the third night after an operation for cataract and was exceptionally severe while complete restoration followed. This suggests an explanation for many postoperative eye disturbances, such as iridocyclitis, which subside without leaving a trace. In another case a traumatic iritis was evidently the seat of a typical attack of gout for which it provided a predisposition. In one case the gout seemed to be due to deposits of lime rather than of urates; the patient had ankylosis of the vertebræ and of some of the joints and radioscopy showed deposits of lime in one foot.

105. **Crowding Out of Bromids by Chlorids in the Tissues.**—The research reported seems to confirm the fact that the bromids are crowded out of the tissues by the chlorids. Retention of salt from insufficiency of the kidneys may affect the utilization of bromids, as also the changes from an intercurrent disease. In treatment it is important to know whether deficiency of salt or the specific action of the bromids is the main factor in the effect of treatment or in the intoxication.

106. **Local Immunization of the Portals of Entry for Infections.**—Lippmann's research seems to open further horizons for effectual immunization, the results indicating that it is possible to develop a local immunity in the mucosa lining of the alimentary canal so that it will be immune to infection by this route. This was realized in his experiments even when the animals were as susceptible as the controls to infection by other routes. The effect is like that observed with the colon bacillus; this causes no disturbances in the alimentary canal, but brought in contact with the bladder mucosa, it is liable to set up at once a lively cystitis. He experimented with 77 mice and with botulin toxin, introduced into the stomach of the mouse through a ureter catheter, the tip being first softened in the Bunsen flame to prevent injury as it was introduced through the cardia. In the few cases in which the mucosa was injured, the toxin acted as if given by the subcutaneous route, the mice all dying within 24 hours. The mice were immunized with 13 doses of the toxin, given at five-day intervals, the amounts ranging from 0.03 to 0.16 gm. After this the animals bore without injury ingestion of a dose of 0.5 gm. of the toxin while 0.000025 gm. by the subcutaneous route proved promptly fatal. The facts observed throw light on the experiences with immunization against typhoid, cholera and anthrax. Notwithstanding a general immunity realized from the immunization procedures, evidenced by the attenuation of the disease in the vaccinated, the intestinal mucosa seems to be as susceptible in them as in the non-immunized.

Among the 424 soldiers contracting typhoid in the African troops in 1905 were 100 who had been vaccinated against typhoid, but the disease ran an exceptionally mild course in them. On the other hand, Lippmann continues, an attack of typhoid modifies the intestinal mucosa in such a way that the individuals thereafter can ingest highly virulent typhoid germs without contracting the disease. When the cells have once learned to make antibodies, they react afterward to the slightest specific stimulus in this line, and even to the non-specific, with vigorous production of antibodies. A person immunized against typhoid, dysentery or cholera would probably react to either of these germs with antibody production which would render the germs harmless even if they lingered in the intestinal tract as in healthy bacillus-carriers. It may be possible, he adds, that this same principle of artificial local immunization might be applied to prevent further spread of an infectious process already installed. Leber has succeeded in curing an experimental serpiginous ulcer by subconjunctival injection of pneumococcus aggressins, while the process in the other, untreated eye showed no tendency to heal. There are also clinical experiences on record demonstrating a curative influence on furunculosis and impetigo contagiosa and colon inflammation of the bladder from local applications of the antigens.

113. **Recurrence of Uterine Carcinoma After Five Years.**—Semon insists that women who have been operated on for uterine cancer should be kept under supervision even longer that 5 years as he has observed recurrence later than this. In one case the woman of 53 returned for examination as ordered for 6 years after vaginal hysterectomy for carcinoma of the cervix. All was found in good order at these regular examinations but 4 years later there were pains in the pelvis and leucorrhea, and finally a little blood escaped from the vagina. Examination two days later showed extensive hard infiltration around the vagina and a polypous growth in the depths of the vagina which proved carcinomatous. In another case the recurrence developed 5 years after total vaginal hysterectomy. The operation was done on account of a hemorrhagic myoma, but when the uterus was examined afterward a small carcinoma was found in the body of the organ, concealed entirely by the myoma close to it. He has found very few cases on record of recurrence of carcinoma of the body of the uterus; in his case the recurrence had the aspect of inoculation of the scar in the vagina, and yet the external os had been sutured together when the uterus was being removed. This case warns anew of the possibility of coincidence of carcinoma of the body of the uterus with submucous myoma; it may escape discovery even with careful palpation and microscopic examination of scrapings. If the operation consists merely of myomectomy, the interior of the uterus should be examined again carefully afterward for traces of cancer.

Monatschrift für Geburtshülfe und Gynäkologie, Berlin

September, XXXII, No. 3, pp. 241-384

118 History of the International Gynecology Congresses. (Der V. internationale Kongress für Geburtshülfe und Gynäkologie.) A. Martin.
119 *Present Status of Placenta Prævia. (Kritische Beurtheilung der gegenwärtigen Ansichten über Placenta praevia.) L. Gussakow.
120 Suction Apparatus in Treatment of Puerperal Endometritis. (Über Saugebehandlung der puerperalen Endometritis.) A. Sitzenfrey.
121 Lecithin Bouillon for Determining Virulence of Streptococci. R. Franz.
122 *Clinical Study of Retroversion of the Uterus. L. Adler.
123 Suture of the Levator Ani Muscles as Typical Operation for Prolapse of the Uterus. W. Latzko.
124 Etiologic Treatment of Prolapse of Genital Organs. J. Schiffmann and R. Ekler.
125 Primary and Permanent Results of Operations for Perineum Tears. (Resultate bei kompleten Dammriss-Operationen.) K. F. Schaback.

119. **Present Status of Management of Placenta Prævia.**—Gussakow concludes from a comparative study of the recent literature on this subject and his own experience with 25 cases of total, and 112 of partial placenta prævia, that everything tending to induce contraction of the uterus should be avoided if the membranes are still intact. He also believes that tamponing is not effectual in arresting hemorrhage while it invites infection. Puncturing the membranes frequently checks the hemorrhage with partial placenta prævia; if this does not succeed, he advises introducing the inflatable bag inside the membranes. This latter procedure is gentler and he believes that it guarantees better the birth of a living child than does the Braxton-Hicks version. With total placenta prævia, he advises boring through the placenta rather than attempting to separate it. Care is necessary to prevent air embolism; no negative pressure must be permitted in the abdominal-pelvic vessels and the air in the birth canal must not be exposed to any increased pressure. In all such statistics he urges listing separately the cases of partial and total placenta prævia and the mortality separate with each. In his 137 cases, 6 per cent. of the women with total and 1.7 per cent. of those with the partial died, and 50 per cent. of these 8 deaths were due to air embolism, 12.5 per cent. to

infection, while only 37.5 per cent. succumbed to anemia. The prognosis with presenting total placenta prævia is very grave and Cesarean section is justified, he says, in case the woman wishes a living child at any price.

122. **Treatment of Uterine Retroflexion.**—Adler relates that at Schauta's clinic in Vienna no attempt is made to correct retroflexion unless it causes disturbances, and he states that displacement alone is not able to cause menstrual irregularity. Even during the first months of pregnancy the displacement is corrected only if it is impossible to keep the woman under control and if it is causing much disturbance. If the woman complains of trouble ascribable to the displacement, gentle attempts are made to correct it, avoiding instrumental aids, except a pessary if this is able to hold the uterus in its normal position. Schauta disapproves of pessaries except as a transient means of relief; if operative measures are necessary he gives the Doléris technic the preference. In case of fixed retrodisplacement he has frequently found that conservative measures put an end to the disturbances, leaving the displacement uncorrected. The patients return once a year or so for a few weeks of massage which frees them again from all disturbances for another long period.

Münchener medizinische Wochenschrift

September 13, LVII, No. 37, pp. 1921-1976

126 *Operative Mobilization of Stiff Joints. (Operative Mobilisierung ankylosierter Gelenke.) E. Payr.
127 *Acute and Chronic Streptococcus Sepsis and its Relation to Acute Articular Rheumatism. H. Steinert.
128 Functional Tests of the Vagus Innervation of the Heart. H. E. Hering.
129 No Modification of Wassermann Reaction by Modern Medication. W. Schwartz and P. Flemming.
130 Phenol and Camphor as Prototypes of the Symptomatic Acting Antipyretics. E. Harnack.
131 Physiologic Standardizing of Drugs. (Physiologische Wertbestimmung von Drogen, speziell der Folia Digitalis.) W. Straub.
132 *Simple Method for Eosinophil Count and Its Practical Value. (Einfache Methode der Zählung der eosinophilen Leukozyten und der praktische Wert dieser Untersuchung.) R. Dunger.
133 *Causal Relations between Syphilis and Idiocy. E. L. Brückner.
134 *Course and Outcome of Chronic Strumitis. B. Riedel.
135 Biologic Action of Roentgen Rays. R. Werner.
136 *Resuscitation by Ventilation of the Air Passages. (Wiederbelebung durch Ventilation der Luftwege per vias naturales.) F. Kuhn.
137 *Impressions of a Psychiatrist on a Trip Around the World. S. Lilienstein.

126. **Operative Mobilization of Ankylosed Joints.**—Payr gives an illustrated description of the methods that have given him satisfactory results in 9 out of 30 cases of ankylosis of various joints. The main factors for success are precision in diagnosis, and in determining the indications, with technic improving with experience both in the operations and in the after-care. Especially instructive is his study of the cases in which the outcome of his measures was unsatisfactory.

127. **Streptococcus Sepsis and its Relation to Acute Articular Rheumatism.**—Steinert reports eleven cases of acute or chronic streptococcus sepsis, beginning with an insidious course or with sudden embolism of an artery in the Sylvian fossa or slight diarrhea, or the syndrome may suggest an old valvular defect. In other cases pains in the joints were the first symptom; in one case pain in one hip was the only sign of trouble for months, until finally a slight occasional rise in temperature was noted. In other cases there was a long period of vague general disturbances. The syndrome at first did not seem at all grave but death was the invariable outcome, from cardiac insufficiency or embolism or from cachexia. Various strains of streptococcus are able to induce this syndrome; the sepsis assumes an acute form as a rule, but in those who have had acute articular rheumatism at any time the sepsis develops in a milder, more chronic form. This suggests that acute articular rheumatism is a streptococcus disease and modifies the reaction to later streptococcus invasion. It also explains Litten's "chronic, malignant, rheumatic, non-septic form of endocarditis" as a specific, chronic, malignant sepsis and endocarditis lenta occurring probably only in those who have had acute rheumatism in the past. Four of Steinert's patients were young women and the streptococcus sepsis ran an acute fatal course. Another patient was a robust man. A recent endocarditis was the principal feature of the syndrome in all, with severe ulceration in the eight cases that came to necropsy. (Schottmüller's description of endocarditis lenta was summarized in these columns, May 14, 1910, page 1658.)

128. **Testing the Functioning of the Heart Vagus.**—Hering first describes the action of the vagus on the heart in checking the frequency of the heart beat and conduction and rendering the contractions weaker. Then he reviews the various tests for estimating the energy of its action in one or all of these directions, commenting on the acceleration of the heart beat during a deep inspiration and the retarded heart beat during apnea, the Czermak test by pressure on the vagus and Dehio's atropin test, and the interpretation and clinical importance of their findings.

132. **Improved Technic for the Leukocyte Count.**—Dunger describes a simple technic for determination of the eosinophils. The blood is mixed in the pipette in the proportion of 10 to 1 with a mixture of 10 parts each of acetone and of a 1 per cent. aqueous solution of eosin with distilled water to 100 parts. This keeps well and shows up the eosinophils prominently.

133. **Causal Relation of Syphilis to Idiocy.**—Brückner found 16 among the 216 idiots in the institution in his charge who presented stigmata of syphilis or a positive Wassermann reaction, and he thinks that there is probably a causal connection with syphilis in a still larger proportion. On the least suspicion of idiocy the general practitioner should apply the Wassermann test to the child and its parents. Better still would it be, he adds, to make compulsory the Wassermann test of the blood from the umbilical cord at birth. This would reveal the taint in time and would enable successful prophylaxis of abnormal conditions leading to idiocy later.

134. **Course and Outcome of Chronic Strumitis.**—Riedel has encountered 3 cases of chronic strumitis among 1,064 cases of benign goiter in which he has operated. One of the patients has been under observation for 15 years. Silatschek not long ago added another to the 7 previously on record, and his patient spontaneously recovered. This possibility of spontaneous retrogression may explain the rarity of the condition. In case conditions progress to threaten suffocation, excision of a wedge-shaped piece out of the isthmus is the most rational treatment and is generally followed by spontaneous retrogression of the rest of the thyroid. A typical case is given in detail; a young man with a subacute swelling of the thyroid, which was of stony hardness, was threatened with suffocation, but there was no fever. After wedge excision the rest of the gland gradually subsided to normal size and there have been no further disturbances. The microscope showed an accumulation of young connective tissue between the normal elements of the gland, crowding the latter out, and there was a mild endarteritis as with many chronic inflammatory processes.

136. **Resuscitation by Artificial Ventilation of the Air Passages.**—Kuhn hails Meltzer's work in intratracheal insufflation as a great advance; it supplements admirably, he declares, his own work along the line of intubation for inhalation anesthesia, resuscitation, etc. Practical resuscitation should include the use of oxygen or a bellows or large rubber bulb to pump in air. A peroral intubation two-way tube or two single tubes and a longer tube like a catheter should also be on hand. The life-saver should clear the mouth from water, mucus, etc., and then introduce the thinnest tube deep into the larynx, and permit oxygen to flow through it continuously until the arrival of the physician, aiding the ventilation of the lungs by rhythmic compression of the chest as by the ordinary measures for artificial respiration. If the physician is on the spot or when he arrives, he should introduce the two-way tube and continue the inflow of oxygen through the finer catheter tube passed through the other. Whether and when the peroral tube is indicated it is for the physician to determine; the finer tube alone may answer all purposes. If there is no oxygen on hand, a large rubber bulb may be

used to pump common air into the trachea with this same technic through the tube. The patient is benefited by these simple measures and obtains more air than by the use of the oxygen tank with a mask. The mechanical measures for respiration must be kept up continuously according to the usual technic. Kuhn believes that his spiral peroral two-current tube has the advantage over a catheter tube that it does not interfere with the outflow of air as the patient rouses and commences to breathe. He declares that oxygen has no advantage over good fresh air for resuscitation purposes, but the oxygen tank gives a more even and controllable flow. Too little attention hitherto has been paid to the necessity for prompt evacuation of the carbon dioxid in resuscitation of the apparently drowned and others. A two-current tube with air or oxygen forced into the larynx from a tank or ordinary air blown in by a bellows or by a large rubber bulb answers both requirements of introduction of air and escape of waste products. All that the life-saver need have on hand therefore is the two-way tube, the fine catheter tube and the oxygen tank or bellows or bulb.

137. **Impressions of a Psychiatrist on a Trip Around the World.**—Lilienstein describes his impressions of a trip from one insane asylum to another around the world. At the Cairo asylum, alcoholism could be incriminated in the etiology of only 6 among the 423 Mohammedan inmates, but pellagra was responsible for the psychosis in 65 and hasheesh intoxication for 72 among 572 cases. The smoking of hemp, *Cannabis indica* or hasheech, is the vice of the lower classes throughout the Orient and helps to fill the insane asylums. In Ceylon the asylum was more in the nature of a prison, as also in some of the older of the five asylums in Australia. The distances that have to be traversed sometimes to bring the insane to the asylums in Australia are so great that the acute psychoses, curable under other conditions, become confirmed and incurable during the long trip to the asylum. He speaks with admiration of the asylum at Sydney, which is managed on the most enlightened principles and where all the discharged are kept under constant supervision; they or their family or guardian have to sign a contract to return for medical inspection every week or fortnight; if they fail they are promptly fined or otherwise punished or the former patients have to return to the institution. Lilienstein regards this as a most admirable provision. At singapore he saw a peculiar form of psychosis. Epidemic convulsions and retrograde amnesia are its main features; it affects mostly middle-aged women from a certain district. Hysteria and psychic infection may be excluded. The separate attacks last from one to three days. In China neither the state nor the community takes any heed of the sick and least of all of the insane, outside the sphere of the work of the missions. In Japan, the asylums and clinics resemble eastern European models; alcoholism is rare, as also opium and hemp smokers' psychoses. The constant tea drinking in Japan does not seem to lead to nervous disturbances. Lilienstein comments on the resemblance of the coolies to each other; it was impossible even for a trained neurologist like himself to tell them apart. [A traveler in California recently said that the coolie workers there are paid "a certain wage and find themselves, but they are all so exactly alike that the hardest part of their work must be for each to find himself."] Lilienstein remarks that one would expect a very exalted grade of asylum in America after leaving the Japanese institutions, but one is disappointed in that respect. They have no special features. He refers to the Bicêtre hospital at Paris as the most interesting collection, Queen's Hospital for Paralyzed and Epileptics at London as the best neurologic clinic, that is, where the most careful diagnoses are made and treatment individualized, but nowhere, he says, were conditions all around so satisfactory as in Germany.

Therapie der Gegenwart, Berlin

September, LI, No. 9, pp. 385-432

138 Principles of Psychotherapy. P. Dubois.

139 *Insufflation of Air in Treatment of Pleurisy with Effusion. (Behandlung der serösen Pleuritis mit Lufteinblasung.) J. H. Gesellschap.

140 *Digitalis in Treatment of Spontaneous Epistaxis. (Entstehung des spontanen Nasenblutens und seine Behandlung mit Digitalis.) C. E. Focke.

141 *Ehrlich's "606" in Syphilis. (Ehrlichs Syphilishellmittel bei eingen Fällen innerer Lues.) Meidner.

142 *Idem. (Ueber die Ehrlichsche Syphilisbehandlung.) W. Fischer.

143 *Hot Baths in Whooping-Cough. (Heisse Bäder bei Keuchhusten.) T. Schrohe.

139. **Insufflation of Air in Pleurisy with Effusion.**—According to the experiences at the Groningen medical clinic, air is as effectual as oxygen or nitrogen for therapeutic injection into the pleural cavity unless it is necessary to apply protracted compression to the lung; in this case the less absorbable nitrogen is preferable. In pleurisy with effusion the main points are to introduce the drain so as to empty the pleural cavity completely, and to allow the air to take the place of the effusion as it is drained away, thus preventing any sudden changes in the mechanical conditions in the thorax. The relief is immediate and great; the air being so much lighter than the effusion or other fluid in the pleural cavity, the diaphragm is not so weighted down. Some think that the air may prevent further effusion by the compression it exerts on the vessels in the pleura, but it is more likely that as the air is gradually absorbed the resulting negative pressure in the chest favors absorption rather than effusion of fluids. The only objection to this method of treatment is the possible liability to eclampsia of the pleura; this may be induced by the mere introduction of the cannula and is as liable to follow introduction of a drain or exploratory puncture. Extreme care is necessary on this account with all these measures.

140. **Digitalis to Arrest Tendency to Spontaneous Epistaxis.**—Focke has given digitalis for this purpose in 84 cases and it proved successful except in a hemophiliac and in a woman given to excessive coffee drinking and tight lacing. In 75 per cent. of the patients the tendency to nosebleed was promptly and permanently arrested within 24 hours after taking the digitalis, even in a few cases in which the bleeding was due to some anatomic anomaly, correction of which later permanently arrested the tendency to epistaxis. He adds that digitalis formerly was a common remedy for a tendency to hemorrhages but it was abandoned towards the close of the last century for theoretical reasons which have since been shown to be erroneous.

141. **Ehrlich's "606" in Syphilis.**—Meidner has treated 34 patients with the "606" and reports the details of some of the cases. He found the remedy effectual in curing syphilitic lesions on the skin and mucosa; with internal lesions it proved as effectual as a prolonged mercury and iodid course. Tabes and paralysis were not materially influenced, the only trace of effect being on disturbances in the ocular muscles and on the ataxia.

142. **Idem.**—Fischer reviews the entire list of publications on the subject; nearly all have been reviewed in these columns as they have appeared. The recurrences that have been observed show that a definite cure is not realized by the drug. Fischer states that his conclusions as to its efficacy are that it ranks just above calomel, one injection of the "606" accomplishing what it takes two injections of calomel to accomplish. Certain patients refractory to calomel seem to be favorably influenced by the "606." On the other hand, he says, syphilitic affections of the nervous system, on which calomel has a favorable action, respond well to the "606" in some cases, while in others it seems to have no influence or an unfavorable one. Frequently, papulous early syphilides seemed to respond more favorably to calomel than to the "606." On the whole, he states, one may count on obtaining with two or three injections of calomel equally good results, occasionally even better and sometimes not so good. To this he adds that calomel in small doses is much less harmful for the nervous system than the new drug. No syphilologist would think of such a thing as submitting all his syphilitic patients, responding normally to mercury, to a course of calomel. He would reserve the calomel, and this is what Fischer advises for the "606," for the rare cases of syphilis in which mercury and iodid fail. Only critical testing of its value for years to come will finally determine its rank in therapeutics. Already the tendency is noticeable, he says, to

increase the dosage; and this, as well as repeating the doses, exposes to dangers which impose the greatest caution. Fischer is assistant in the skin diseases service at the Virchow hospital at Berlin.

143. **Hot Baths in Whooping Cough.**—Schrohe has always witnessed great relief follow a hot bath given toward evening. The water should be about 99 F. and the child should stay in the bath for from 10 to 15 minutes, the head being kept cool with a cold water compress. The children sleep well after it, and the number and severity of the paroxysms seem much diminished. He has noticed that the skin of children with pertussis is pale and cool, indicating contraction of the vessels in the skin; the hot bath counteracts this, and thus relieves the internal organs, promotes elimination of toxins and soothes the nervous system and the tendency to the paroxysms.

Wiener klinische Wochenschrift, Vienna

September 15, XXIII, No. 37, pp. 1307-1334

144 Spirochetes Uninfluenced by Mercury or Arsenic. (Ueber Quecksilberfestigkeit der Syphilisspirochäten nebst Bemerkungen zur Therapie mit "Ehrlich-Hata 606.") M. Oppenheim.

145 Tubercle Bacilli in the Blood. (Vorkommen von Tuberkelbazillen im zirkulierenden Blut.) P. Aca-Nagy.

146 Operative Cure of a Perforated Duodenal Ulcer. J. Gobiet.

147 Industrial Morbidity and Mortality in Leipsic and Vienna. (Berufliche Morbidität und Mortalität in Leipzig und Wien.) S. Rosenfeld.

Zeitschrift für Urologie, Berlin

September, IV, No. 9, pp. 641-728

148 The Supporting Tissue of the Kidneys. (Zur Kenntnis des Stützgewebes der Nieren.) R. Kölster.

149 Operations for Diffuse Cancer of the Penis. (Operationen beim diffusen Krebs des männlichen Gliedes.) R. N. Cholzoff.

150 Determination of Urease and its Clinical Importance. (Ueber Ureasebestimmungen und ihre klinische Verwertung.) F. Simon and E. Meyer.

Zentralblatt für Chirurgie, Leipsic

September 17, XXXVII, No. 38, pp. 1249-1280

151 Access to the Anterior Mediastinum by Transverse Resection of the Sternum. (Oeffnung des Mediastinum vermittels querer Brustbeindurchtrennung.) P. L. Friedrich.

152 *Semicircular Clamp for Removing Hemorrhoids. (Neues Verfahren zur radikalen Beseitigung der Hämorrhoiden.) W. Schaack.

152. **Hemorrhoid Clamps.**—Schaack's clamp forms a semicircle when closed around the base of the hemorrhoids; two clamps are used, thus forming a complete circle around the previously dilated anus. The projecting tops of the hemorrhoids are then cut or burnt off, and a few sutures taken through the base under the clamps. The anus is then packed with gauze around a large drain; the clamps are removed and there is nothing left of the hemorrhoids except a linear wound encircling the anus. Not a drop of blood is lost with this technic, while the hemorrhoids are radically removed and the rectum is drained without danger of infecting the wound. As the cicatrix is outside the sphincter and sound mucosa extends inward from it, there is no danger of stricture later. The curving clamp is illustrated.

Zentralblatt für Gynäkologie, Leipsic

September 17, XXXIV, No. 38, pp. 1233-1256

153 *Actinomycotic Parametritis. O. Bondy.

154 Technic for Draining the Abdominal Cavity. (Bauchhöhlendrainage.) J. Fabricius.

153. **Actinomycotic Parametritis.**—Bondy reports a case of parametritis in an unmarried woman of 28, a factory worker. The actinomycosis involved the ovaries and tubes on both sides and encroached on the connective tissue in the pelvis. As the health continued to decline under weeks of ordinary conservative treatment, the adnexa were removed. The fever subsided at once but the cachexia was too far advanced and the patient soon succumbed. On account of the possibility of radical cure under appropriate iodid treatment in time, the discovery of extensive, very tough parametritis, especially when there is a tendency to perforation toward the abdominal walls, should warn of the necessity for bacteriologic examination of the pus and histologic examination of the granulation tissue which can generally be readily obtained from the abdominal walls. The prognosis depends on this being done in time so that proper treatment can be instituted.

Gazzetta degli Ospedali e delle Cliniche, Milan

September 6, XXXI, No. 107, pp. 1129-1136

155 *Intubation for Small Foreign Bodies in Air Passages of Young Children. M. Gioseffi.

September 8, No. 108, pp. 1137-1144

156 Curability of Tuberculous Meningitis. I. Celeste.

September 11, No. 109, pp. 1145-1160

157 Biology of Embryonal and Neoplastic Tissues. G. Fischera.

September 13, No. 110, pp. 1161-1168

158 Seroprophylaxis of Tetanus. (Nota a proposito delle inlezioni di antitossina nel trattamento preventivo contro il tetano.) C. Viscontini.

155. **Intubation for Foreign Body in the Throat.**—Gioseffi reports three cases of infants suffocating from a foreign body in the throat. Attempts to relieve the suffocation and to remove the foreign article by intubation all failed. Intubation has no chance of succeeding unless the foreign body is extremely small and free or only loosely lodged in the air passage, but Bokay and others have reported a few cases in which the child was saved by this means.

Policlinico, Rome

September 11, XVII, No. 37, pp. 1155-1186

159 Concrement and Suppuration in Submaxillary Gland. (Pioscialolitiasi della sottomascellare.) O. Cignozzi.

Riforma Medica, Naples

September 12, XXV, No. 37, pp. 1009-1036

160 Functional and Organic Stomach Disease. (Gastropatie dinamiche ed organiche.) G. Rummo.

161 Experiences with Local Anesthesia for Major Operations. C. Malnoll.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

A TEXT-BOOK OF BOTANY AND PHARMACOGNOSY. Intended for the Use of Students of Pharmacy, as a Reference Book for Pharmacists and as a Handbook for Food and Drug Analysts. By Henry Kraemer, Ph.D., Professor of Botany and Pharmacognosy, and Director of the Microscopical Laboratory, in the Philadelphia College of Pharmacy. Fourth Edition. Cloth. Price, $5 net. Pp. 888, with 2,000 illustrations. Philadelphia: J. B. Lippincott Co. (1910).

HANDBOOK OF REGIONAL ANATOMY. By Francis C. Ford, M.D., Professor of Anatomy, Head of Department of Anatomy and Senior Demonstrator of Anatomy in the Hahnemann Medical College and Hospital, Chicago. Cloth. Price, $1.50 net. Pp. 193. Chicago: Francis C. Ford, 1910.

TOBACCO AND ITS DELETERIOUS EFFECTS. A Book for Everybody, Both Users and Non-Users. By Charles E. Slocum, M.D., Member of Local, Ohio State, and the American Medical Associations. Cloth. Price, $1. Pp. 70. Toledo: The Slocum Publishing Co., 1909.

THE TAXONOMIC VALUE OF THE MICROSCOPIC STRUCTURE OF THE STIGMAL PLATES IN THE TICK GENUS DERMACENTOR. By C. Wardell Stiles. Hyg. Lab. Bull. 62, August, 1910. Paper. Pp. 72, with 134 illustrations. Washington: Government Printing Office, 1910.

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